



## Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).

## INDEX TO LITERATURE.

In the following index all articles from foreign sources are indicated by the numbers prefixed being in bold-faced type. All those having numbers in the ordinary type relate to American literature.

### A.—WORKS OF A GENERAL NATURE.

- 1003.** [ANON.] **Potato-blight gauge.** <Ann. Rept. Sec. for Agr., Nova Scotia, for 1890, Halifax, 1891, p. 73.

Gives a table showing relation of temperature to increase of blight. There will be no blight at 30° F. Its optimum is 72°, and the blight dies at a temperature of 77° F. (J. F. J.)

- 1004.** [ANON.] **Practice vs. theory.** <Pacific Tree and Vine, vol. IX, San José, Cal., Mar. 21, 1892, p. 5, 1 col.

Refers to statement made by Mr. E. Smith at Stanford University, that Tahite orange stock is best adapted for use in California. In refuting this, quotes from W. A. Saunders to the effect that foot rot is very prevalent in Tahite stock. This writer also recommends *Citrus trifoliata* as a hardy Japanese stock, admirably adapted to resist cold, and free from disease. (J. F. J.)

- 1005.** BAIRD, DAVID. **American Pomological Society.** <Proc. N. J. State Hort. Soc., 17th meeting, Newark, 1892, pp. 21-25.

Mentions the papers read before the meeting, referring to one by Galloway on losses from fungous diseases in 1890—from apple scab amounting to \$16,000,000, and from diseases of pears, plums, etc., amounting to not less than \$50,000,000 annually. Notes remarks of Erwin F. Smith on peach yellows, giving as the conclusions reached that the disease is not caused by soil exhaustion; that it can not be cured by fertilizers; that the only remedy is destruction of diseased trees; that a healthy tree can be grown where a diseased one has been; and that the disease is increasing. (J. F. J.) [The text says "can not be grown." This is an error.]

- 1006.** BOUDIER, [E.] **Notice sur M. Roumeguère.** <Bull. Soc. Mycol. France, vol. VIII, May 22, 1892, p. 70.

Casimir Roumeguère died Feb. 29, 1892, in his sixty-third year. He was the author of a considerable number of works, some of which, especially "Revue Mycologique," secured him a great reputation. His "Cryptogamie illustrée," "Flore mycologique de Tarn-et-Garonne," and finally "Fungi gallici exsiccati" occupy a prominent place in mycological literature. (T. H.)

- 1007.** BOURQUELOT, EM. **Champignons desséchés falsifiés avec des morceaux de navet.** <Bull. Soc. Mycol. France, vol. VIII, Paris, Mar. 31, 1892, p. 39.

Alessandri (Zeitsch. f. Nahrungsm.-Untersuch. u. Hyg., 1891, p. 79) has examined some articles supposed to be dried mushrooms, but the appearance and odor did not correspond to the organisms they were said to be. They were simply turnips, cut into pieces and dried. (T. H.)

- 1008.** BOURQUELOT, EM. **Les champignons au marché d'Iéna en 1891.** <Bull. Soc. Mycol. France, vol. VIII, Paris, Mar. 31, 1892, pp. 38-39.

Dr. Em Pfeiffer (Aufsicht des Pilzverkaufs, in Apothekezeitung, 1891, p. 561) enumerates the mushrooms that have been offered for sale in the market of Jena. There were two varieties of *Psalliota campestris*, viz. *vaporaria* and *silvicola*; also *Marasmius scorodorus*, *Boletus edulis*, and by mistake *Boletus felleus* and *Russula foetens*. (T. H.)

- 1009.** COLENZO, W. **Plain and practical thoughts and notes on New Zealand botany.** <Trans. and Proc. New Zealand Inst., ser. 7, vol. XIV, Wellington, May, 1892, p. 403.

Notes that a few of the New Zealand fungi were articles of food with the ancient Maoris, but the principal edible one, *Hirneola polytricha*, has long been a commercial article, as much as 339 tons, valued at £15,581, having been collected in the forests in one year for the Chinese market. (T. H.)

- 1010.** COOKE, M. C. **Plant diseases and fungi.** <Essex Nat., vol. VI, Essex, Jan.-Mar., 1892, pp. 18-31.

Refers to the injury caused by fungi to crops, especially cereals and apples. Notes the spread of diseases, like those of the potato and hollyhock, and mentions diseases caused by microorganisms. Peach yellows and California vine disease are especially mentioned. Refers to experiments by Halsted on cultivation of fungi, and inoculation of diseases of melons. Advocates the treatment of diseases of plants with fungicides. (J. F. J.)

- 1011. CONSTANTIN, JULIEN.** Note sur un cas de pneumomycose observé sur un chat. <Bull. Soc. Mycol. France, vol. VIII, May 22, 1892, pp. 57-59.

Describes some obscure organisms, consisting of large and small spores, which were found in the trachea of a cat that had died from suffocation. Two kinds of spores were found, the larger possibly belonged to a *Mortierella*, and probably represents a new species. The smaller spores may represent a species of *Mucorinæe*. (T. H.)

- 1012. CROOKS, WM.** Some possibilities of electricity. <Fortnightly Rev., n. ser., vol. LI, London, Feb., 1892, pp. 173-181.

Contains a few lines about fungi. States that "electric currents not only give increased vigor to the life of higher plants, but tend to paralyze the harmful activity of parasites, animal and vegetable." Estimates the loss to Great Britain by insects and fungi at £12,000,000 per annum. Says we have yet to decide whether electricity can be made beneficial to our crops either directly or by preventing fungi. (M. B. W.)

- 1013. DUDLEY, W. R.** Report of the cryptogamic botanist. <Third Ann. Rept. Cornell Univ. Agr. Exp. Sta. (for 1890), Ithaca, N. Y., 1891, pp. 29-34, fig. 1.

Describes the laboratory and the methods of work, with general mention of the work carried on during the year (see also Exp. Sta. Rec., vol. II, Apr., 1891, pp. 501-502). (J. F. J.)

- 1014. [EDITORIAL.]** Fruit diseases in Congress. <Orange Judd Farmer, vol. XI, Chicago, Mar. 19, 1892, p. 181, 1 col.

Gives text of bill introduced into House of Representatives to prohibit interstate transportation of diseased nursery stock, vines, etc. Considers the present form of the bill unwise because of difficulty of determining the presence of diseases. Believes restricting the sending of nursery stock from regions known to be affected would be a good plan, but even this has objections. Does not believe at all in the bill in its present form. (J. F. J.)

- 1015. [EDITORIAL.]** Get rid of the deposit.—The board of health on the grape question. <Daily Times, New York, Sept. 27, 1891.

Gives abstracts of remarks by B. T. Galloway on the Bordeaux mixture, before the New York board of health, and the resolutions adopted by the board and the Chamber of Commerce. (J. F. J.)

- 1016. [EDITORIAL.]** Good news for nurserymen and fruit-growers. <Geneva [N. Y.] Advertiser, May 5, 1891.

A statement of work to be carried on at the New York Agricultural Experiment Station, under the auspices of the Department of Agriculture, for the treatment of fungous diseases of apple, pear, quince, cherry, plum, and peach. Mentions the number of stocks and the contributors of each. Gives a summary of the problems to be investigated. Refers also to prospective treatments for apple scab at Brockport. (J. F. J.)

- 1017. [EDITORIAL.]** [Work on plant diseases by the Department of Agriculture.] <Farm and Home, Wilmington, Del., May 8, 1890.

Refers to work of Division of Vegetable Pathology in investigation of peach yellows, pear leaf-blight, and scab. The two latter can be controlled by the use of fungicides. (J. F. J.)

- 1018. FISCHER, A.** The importation of vine cuttings to Austro-Hungary. <Agr. Jour. Cape Colony, vol. IV, Cape Town, Oct. 8, 1891, p. 85,  $\frac{1}{2}$  col.

Notifies the action of the Austro-Hungarian Government in prohibiting the importation of cuttings and even vine seeds from the United States. Considers the prohibition too sweeping. (J. F. J.)

- 1019. HALSTED, B. D.** What the station botanists are doing. <Bot. Gaz., vol. XVI, Crawfordsville, Ind., Oct. 16, 1891, pp. 288-291.

A general statement of the work of botanists at 22 different agricultural experiment stations. Most of these are doing mycological work (see Exp. Sta. Bull. No. 7, U. S. Dept. of Agr., Washington, 1892, pp. 17-19, under heading of Report of the Section of Botany of the Association of American Agricultural Colleges and Experiment Stations). (J. F. J.)

- 1020. HARRINGTON, MARK W.** Meteorological work for agricultural institutions. <Exp. Sta. Bull. No. 10, U. S. Dept. Agr., Washington, Feb. 3, 1892, pp. 23.

On p. 16 states desirability of making observations on the appearance of fungous diseases of plants when dependent on weather conditions. By observing these, predictions might be made as to the appearance of plant diseases. (J. F. J.)

- 1021. KLEBAHN, H.** Ueber Pflanzenkrankheiten und deren Bekämpfung. Bremen, 1892, pp. 11.

A popular sketch of plant diseases and their remedies. *Peridermium strobis* seems to be dreaded in Germany, and it is recommended not to keep *Pinus strobus* in cultivation together with native or imported species of *Ribes*. No remedy is known. The author recommends the hot-water treatment as most successful against smut in the cereals, and describes this and other kinds of treatments. (T. H.)

1022. [MAYNARD, S. T.] **The amount of copper on sprayed fruit.** <Mass. Hatch Agr. Exp. Sta. Bull. No. 17, Amherst, Apr., 1892, pp. 38-40.

Gives a short account of analyses made of grapes and apples to ascertain the amount of copper on the fruit. On one sample of the former 0.002 of 1 per cent was found and on another no trace whatever. On one peck of apples there was 0.022 of a grain of copper, this amount requiring about 2,000 barrels of apples to yield an ounce of the copper oxide. (J. F. J.) See also *Science*, vol. xix, May 13, 1892, pp. 275-276, under title "Is it dangerous to spray fruit trees with solutions of poisonous substances in order to prevent depredations from destructive insects?"

1023. MCALPINE, D. **Report of the vegetable pathologist.** <Dept. of Agr. Victoria, Bull. No. 12, Melbourne, July, 1891, pp. 59-60.

Gives a general outline of the work to be undertaken by the Government in investigating plant diseases. (J. F. J.)

1024. NEALE, A. T. [Introduction to report of F. D. Chester on fungicides for grape diseases.] <Del. Agr. Exp. Sta. Bull. No. 10, Newark, Oct., 1890, pp. 3-7.

Mentions the results obtained by treatment of vine diseases in the increased money value. Notes that leaving unsprayed rows in the center of a vineyard tends to decrease the real value of spraying. The unsprayed vines should be outside of all the good influences of the sprayed ones in order to obtain an accurate knowledge of the value of the fungicide. Notes also that anthracnose can be held in check by Bordeaux mixture and by carbonate of copper. Argues in favor of using a spray of vinegar to clear grapes of deposit of copper, should it be conspicuous (see Exp. Sta. Rec., vol. ii, U. S. Dept. of Agr., Washington, July 1891, pp. 712-713.) (J. F. J.)

1025. NEALE, A. T. [Report of the director of Delaware Agricultural Experiment Station.] <Third Ann. Rept. Del. Agr. Exp. Sta. for 1890 [Newark], 1891, pp. 7-24, figs. 4.

Refers to the diseases of plants investigated by Prof. Chester and mentions the practical results of the work in orchards and vineyards. Mentions also investigations made on diseases of various field crops. On page 23 refers to studies on copper on grapes and in potatoes. Analyses of the former show about 47 pounds of metallic copper in 1,000,000 pounds of grapes. In potatoes the pulp showed from 1.26 to 1.33 pounds of copper per 1,000,000 pounds, while the skin showed from 16 to 40 pounds in 1,000,000 (see Chester, F. D., and Penny, C. L.). (J. F. J.)

1026. PENNY, C. L. **Report of the chemist.** <Third Ann. Rept. Del. Agr. Exp. Sta. for 1890 [Newark], 1891, pp. 129-154.

On pp. 149-150 discusses copper on grapes and concludes that it is not injurious. The tongue is as safe a guide as anything else, as with 47 parts in one million a distinctly metallic taste is perceived; this proportion is the same as that of beef liver. On p. 154 discusses the absorption of copper from the soil, and notes that potatoes absorb it to a limited degree and that it is mainly stored up in the rind of the tubers. These contain from 16 to 40 parts per million, the latter grown in a soil known to be rich in copper. (J. F. J.)

## B.—DISEASES OF NONPARASITIC OR UNCERTAIN ORIGIN.

1027. [ANON.] **Peach trees with diseased branches.** <Gard. Chron., 3d ser., vol. ix, London, Apr. 14, 1891, p. 473,  $\frac{1}{2}$  col.

Refers to an obscure disease due perhaps to overrich soil. Notes that knife pruning frequently causes gumming, and gives as a cure semi-starvation of roots and trimming by removing by the finger and thumb branches not wanted. (J. F. J.)

1028. [ANON.] **Peach yellows.** <Gard. and Forest, vol. iv, New York, Feb., 1891, p. 84,  $\frac{1}{2}$  col.

Notes decrease of disease in Michigan, but increase in Maryland. Argues from this that benefits are likely to result from enforcement of laws against the disease. States that no cure is as yet known. (J. F. J.)

1029. [ANON.] **Peach yellows.** <Gard. Chron., 3d ser., vol. xi, London, Mar. 26, 1892, p. 402,  $\frac{1}{2}$  col.

States that while the disease is unknown in England it is common in the United States. Refers to work of Dr. Erwin F. Smith, showing contagious nature of the disease. (J. F. J.)

1030. [ANON.] **"Takeall."** <Gard. and Field, vol. xvii, Adelaide, Feb., 1892, p. 182,  $\frac{1}{10}$  col.; p. 186,  $\frac{1}{10}$  col.

Sandy soil with clay subsoil seems to favor the disease. Caused by soil being too retentive of moisture. Insects have been observed on roots of affected plants. (J. F. J.)

1031. [ANON.] **"Take-all."** <Gard. and Field, vol. xvii, Adelaide, Feb., 1892, p. 189,  $\frac{1}{10}$  col.

States that fallowed land is most subject to the disease. "Deadheads" considered a continuation of "take-all." Considerable difference of opinion was expressed in a discussion of the subject. (J. F. J.)

1032. ATKINSON, GEO. F. **Some leaf-blights of cotton.** <Ala. Exp. Sta. Bull. No. 36, Auburn, Mar., 1892, pp. 32, pl. 2.

Describes yellow leaf-blight (the same as black rust of previous papers) as a physiological disease, due to imperfect nutrition or assimilation. Gives an account of the appearance of the disease on the leaves, the injury to which may be increased by the growth of fungi under favorable conditions. Gives details of experiments with various fertilizers, especially with kainit and nitrate of soda. The former tends to prevent the disease and also to increase the crop. Gives history of kainit as a preventive, and discusses the effects of the characters of soil on the disease. "Red leaf-blight" is due to hastened maturity of the plant, caused by impoverished condition of the soil, and may be prevented by use of proper fertilizers. "Cerealite" is said to produce good results (see Exp. Sta. Rec., vol. III, July, 1892, pp. 844-845). (J. F. J.)

1033. [BERCKMANS, P. J.] **Peach rosette in the South.** <Am. Gardening, vol. XIII, New York, Dec., 1892, p. 762,  $\frac{1}{3}$  col.

Notes the spread of disease in the South, as well as its virulent nature, and recommends immediate destruction of all infected trees. Wild plums in vicinity should be destroyed, as disease appears among these first and then spreads to cultivated trees. (J. F. J.)

1034. BONET, JEAN. **Folletage ou maladie nouvelle.** <Prog. Agr. et Vit., 9th year, Montpellier, July 31, 1892, pp. 97-98.

This seems to be a new disease, which has lately appeared in the French vineyards. The leaves become dry and curl up in the form of a tube, and this takes place very suddenly, while the petiole shows an annular incision at the base of the blade or where the petiole is joined to the stem. The leaves do not drop off but remain on the trees in this abnormal position. High winds may be the cause. (T. H.)

1035. BURBERRY, W. **Disease in Cattleyas.** <Gard. Chron., 3d ser., vol. XI, London, Feb. 27, 1892, p. 276, 1 col.

Describes a disease affecting orchids which causes the pseudo-bulbs and leaves to change from green to yellow and black. In one case the diseased portions were cut from the leaves and when planted recovered. The editor recommends cutting out diseased portions and washing the wound with Condyl's fluid or carbolic acid. (J. F. J.)

1036. C——, G. **Tomato disease in Teneriffe.** <The Garden, vol. XXXIX, London, June 20, 1891, p. 572,  $\frac{1}{3}$  col.

Refers to an obscure disease which causes plants to shrivel up on cold, clear nights, with dew but no wind. The plants recover when the weather becomes warm. (J. F. J.)

1037. CHARLTON, J. **Pruning and canker in fruit trees.** <Gard. Chron., 3d ser., vol. XI, London, Jan. 16, 1892, p. 83,  $\frac{1}{3}$  col.

Records curing canker by close pruning of diseased trees. (J. F. J.)

1038. CHUARD, E. **Maladie de Californie.** <Chron. Agr. du Canton de Vaud, vol. v, Lausanne, Mar. 10, 1892, p. 116.

Refers to the destructive nature of the California vine disease and notes the demand of various societies in France that the Government prohibit the introduction of vines from California and from America in general. (J. F. J.)

1039. D——, C. W. **The violet disease.** <Am. Florist, vol. VII, Chicago and New York, Jan. 14, 1892, p. 492,  $\frac{1}{3}$  col.

Notes appearance of disease on certain varieties of violets. Remedy consists in picking off affected leaves. (J. F. J.)

1040. DEGRULLY, L. **Les Tétranyques et la brunissure.** <Prog. Agr. et Vit., 9th year, Montpellier, Aug. 21, 1892, pp. 169-170.

F. Sahut claims to have discovered a new disease of grapevine, due to insects. These are red spiders (*Tetranychus*), which live upon the lower surface of the leaves, where they produce a silky tissue, rather loose in texture. The leaves attacked in this way turned yellow, faded, and soon dropped off. Viala considers this case to be a mere coincidence, since, according to him, the leaves were killed by *Plasmiodiophora vitis*, although the color of the spots on the leaves was bright red, not brown, as in the "brunissure." Several correspondents state that this disease seems to start in places near the roads, where it often has been observed to remain without going farther. (T. H.)

1041. DOD, C. W. **Basal rot in daffodils.** <Gard. Chron., 3d ser., vol. x, London, Aug. 8, 1891, p. 173,  $\frac{1}{4}$  col.

Notes the presence of an obscure disease in bulbs, due, it is thought, to impaired constitutions arising from unsuitable cultural conditions. (J. F. J.)

1042. GAYLORD, EDSON. **Pruning orchard trees.** <Orange Judd Farmer, vol. XI, Chicago, Feb. 27, 1892, p. 133,  $\frac{2}{3}$  col.

Argues against too great trimming of fruit trees in the Northwest, as it renders them liable to be killed by the hot sun [sun scald]. (J. F. J.)

- 1043.** H——, T. C. **Splitting of peaches and nectarines.** < Gard. Chron., 3d ser., vol. x, London, Oct. 24, 1891, p. 493,  $\frac{1}{2}$  col.  
 Attributes this trouble to conditions of moisture and heat. (M. B. W.)
- 1044.** HAMANN, VALENTINE. **Violets.** < Am. Florist, vol. VII, Chicago and New York, Jan. 7, 1892, p. 461,  $\frac{1}{2}$  col.  
 States belief that disease is due to planting out late and to the plants being grown too delicately. (J. F. J.)
- 1045.** HELLIER, J. B. **Peach yellows again.** < Agr. Jour. Cape Colony, vol. IV, Cape Town, Dec. 17, 1891, p. 135,  $\frac{3}{4}$  col.  
 Refers to the article in Scientific American (see No. 366), stating that the disease is due to starvation. Does not so regard it, but believes lowered vitality may make the tree more susceptible to the disease, hence recommends the use of potash fertilizers, especially wood ashes, to keep fruit trees in good condition. (J. F. J.)
- 1046.** HEYER, EDUARD. **Eine neue Krankheit der Eichenschälwaldungen.** < Allgemeine Forst- und Jagdzeitung, Darmstadt, Dec., 1891, pp. 438-439.  
 A supposed new disease has appeared upon oak trees 2 years old in plantations near Alzey, in Rhein-Hessen. The leaves show curled margins and soon fade away, and the branches die soon after. In this manner numerous trees have been destroyed, but the nature of the disease is not known. Prof. Hartig supposes that the disease is due to a fungus, the mycelium of which he claims to have discovered, but not yet described. (T. H.)
- 1047.** HOPTON, E. **The cultivation of the peach (*Persica vulgaris*).** < Dept. of Agr. Victoria, Bull. No. 14, Melbourne, Dec., 1891, pp. 134-137.  
 Notes the occurrence of "yellows" in Victoria. States that he believes it was stamped out of his orchard by digging away the old and substituting fresh soil. Does not know any cure and recommends the removal of the tree when the disease has attacked it. For "curl blight" recommends, when the tree is coming into leaf, clearing the earth from the collar of the tree and watering with 1 pint of coal tar to 6 gallons of water, repeating the same when the fruit is set. (J. F. J.)
- 1048.** LELONG, B. M. **Eastern peach yellows.** < Ann. Rept. State Board Hort. of Cal. for 1891, Sacramento, 1892, pp. 405-410, fig. 1.  
 Gives a statement of the wide extent and destructive character of the disease, advocates prohibiting the importation of trees from outside the State, and advises against buying trees from localities outside of California. (J. F. J.)
- 1049.** MACOWAN, P. **Disease in peach trees.** < Agr. Jour. Cape Colony, vol. III, Cape Town, May 7, 1891, p. 201,  $\frac{1}{2}$  col.  
 Asks peach-growers whose trees are affected by "chlorosis of the leaves, supposed to be the same disease as the American yellows," to try the effect of mixing sulphate of iron with the soil about the trunk of the trees. (J. F. J.)
- 1050.** MACOWAN, P. **Peach yellows again.** < Agr. Jour. Cape Colony, vol. IV, Cape Town, Dec. 17, 1891, p. 135,  $\frac{3}{4}$  col.  
 Refers to work of Dr. Erwin F. Smith, and to the statement of Meehan that *Agaricus melleus* is the cause of the disease. Quotes Sargent against this theory and argues against it himself, arguing in favor of a bacillus being the cause. Mentions a disease of the olive produced by a similar organism, and one of young blue-gum trees. Recommends the immediate destruction of the latter by fire. (J. F. J.)
- 1051.** MACOWAN, P. **Yellows in peach trees.** < Agr. Jour. Cape Colony, vol. III, Cape Town, May 7, 1891, p. 208,  $\frac{1}{2}$  col.  
 Refers to an article in Garden and Forest to the effect that the disease in New Jersey is caused by a species of root louse and may be cured by the application of kainit or tobacco. Questions this assertion and notes that examinations of trees in South Africa have failed to reveal any insect or insect injuries. (J. F. J.)
- 1052.** MEEHAN, THOS. **Peach tree "yellows."** < Meehan's Monthly, vol. II, Germantown, Pa., May, 1892, p. 80,  $\frac{1}{2}$  col.  
 Notes the fact that while peach trees have been shipped in large quantities to the South and to the Pacific coast from the Northeastern States, yellows has not appeared in either locality. Yet as soon as they were sent to Michigan and some other States the disease appeared. Queries why this should be, and refers to reasons suggested in a previous number of the Monthly (see No. 679) [i. e., because the disease is due to *Agaricus melleus*, which does not occur where the disease is absent]. (J. F. J.)
- 1053.** MEIER, HERMANN. **Yellows in peach trees and disease in hop plants.** < Agr. Jour. Cape Colony, vol. IV, Cape Town, Nov. 5, 1891, p. 105,  $\frac{3}{4}$  col.  
 Notes the occurrence of what may be yellows and asks for information. States also that rust had appeared on hop plants. (J. F. J.)

1054. PECK, D. E. **Fruit tree sun-scald.** <Orange Judd Farmer, vol. xi, Chicago, Mar. 12, 1892, p. 164,  $\frac{1}{2}$  col.

Argues against excessive trimming of fruit trees in the Northwest, as the hot afternoon sun is liable to produce sun-scald if the top be too open. (J. F. J.)

1055. PERINGUEY, L. **Disease in orange trees.** <Agr. Jour. Cape Colony, Cape Town, Apr. 23, 1891, pp. 192-194.

Describes a disease in which the leaves become yellow, a gum exudes from the bark above the ground, and the roots when exposed give out an offensive smell. The trouble occurs in all situations, and is supposed to be due to a fungous parasite. (J. F. J.)

1056. ROBINSON, NORMAN. **The "die-back" question again.** <Fla. Disp. Farm. and Fruit Grower, n. ser., vol. iv, Jacksonville, May 5, 1892, pp. 352-353.

Considers the disease in the greater number of cases due to "ill-balanced or defective fertilization." Gives analyses of various kinds of soil, and thinks that in one case at least the cause of the disease was defective drainage of the subsoil. Believes that the application of lime to the surface and good drainage below the surface will be beneficial. (J. F. J.)

1057. TAYLER, WILL. **Cracks and spots on pears.** <Gard. Chron., 3d ser., vol. xi, Feb. 6, 1892, London, p. 180,  $\frac{1}{2}$  col.

Thinks that climatic influences, such as an east wind, are the most important causes of diseases of plants. In case of the pear, states that the strongest predisposing cause is a crude, infertile subsoil. In a note by the editor the appearance of injuries caused by *Fusicladium* and *Gymnosporangium* are briefly described. (M. B. W.)

1058. TEPPER, J. G. O. **"Take-all," and its remedies.** <Agr. Gaz. N. S. Wales, vol. iii, Sydney, Jan., 1892, pp. 69-72.

Describes the appearance of a field affected by the disease, and notes that it has been variously ascribed to fungi, insects, frost, inefficient fertilization, etc. Sketches the general needs of plants for growth, and concludes that the disease is due to starvation. Gives instances where manuring or fertilizing had prevented it, and advocates use of manure for its prevention. (J. F. J.)

1059. VAN DEMAN, H. S. **The relative merit of various stocks for the orange.** <Div. of Pomol. Bull. No. 4, U. S. Dept. Agr., Washington, 1891, pp. 1-17.

Notes that sour stock is generally free from disease, especially *Mal di goma*, and recommends the grafting of budded stock on it rather than on sweet. Sour seedlings are affected by leaf-scab, but when budded the danger from this is over, as the disease does not affect the sweet top. Ammoniacal solution of copper recommended for trial. *Mal di goma* occurs in Louisiana among sweet seedlings, and is there known as "sore shin." In California it has been treated by cutting out diseased wood and painting with rubber paint. Sour stock is used there also. For a reprint of the article, together with notes on *Mal di goma*, by W. R. King see No. 353; also Agr. Gaz. N. S. Wales, vol. iii, Sydney, Feb., 1892, pp. 129-141. (J. F. J.)

1060. [VARIOUS.] **Black-knot.** <Ann. Rept. State Board Hort. of Cal. for 1891, Sacramento, 1892, pp. 431-432.

A discussion on black-knot of roots of nursery stock and grapevines, some stating the cause to be moisture, others that the trouble is due to the stagnation of sap or bursting of sap vessels. (J. F. J.)

(See also Nos. 1005, 1010, 1068, 1108, 1212.)

## C.—DISEASES DUE TO FUNGI, BACTERIA, AND MYXOMYCETES.

### I.—RELATIONS OF HOST AND PARASITE.

1061. BURRILL, T. J. **What are the possibilities of originating a class of pears exempt from blight?** <Proc. Am. Pom. Soc. for 1891, 23d session, 1891, pp. 66-70.

Notes the cause of blight to be a microorganism (*Micrococcus amylovorus*) and describes its general appearance and mode of growth. Believes it possible to overcome blight, and suggests testing the ability of different varieties of pears to resist blight by inoculation. (J. F. J.)

1062. C[OOKE], M. C. **Fungi on various trees.** <Gard. Chron., 3d ser., vol. ix, London, Jan. 24, 1891, p. 123,  $\frac{1}{2}$  col.

Notes that various species of Polyporei occurring on trees attack only decayed places, and not the living, healthy tissues. (J. F. J.)

1063. HALSTED, B. D. **Parasitic fungi as related to variegated plants.** <Bull. Torrey Bot. Club, vol. XIX, New York, Mar. 5, 1892, pp. 84-88.

Notes the fact that plants with variegated leaves seem more subject to the attacks of fungi than those not variegated. Gives a list of the genera of plants containing species with variegated leaves and the genera attacking each. Notes that the more widely the light spots are scattered over the leaf, the more generally the leaf is diseased. Considers it natural for variegated plants to blight, inasmuch as they are deprived of a large part of the necessary chlorophyll and are in a weakened condition in consequence (see notice in Science, vol. XIX, Mar. 23, 1892, p. 172,  $\frac{1}{2}$  col; also Gard. and Forest, vol. v, Mar. 23, 1892, p. 142, where the paper is reviewed and an argument advanced against the use of variegated plants as ornamental features in landscape gardening). (J. F. J.)

1064. HALSTED, B. D. **The influence upon crops of neighboring wild plants.** <Proc. N. J. State Hort. Soc., 17th meeting, Newark, 1892, pp. 110-122 (reprint 13 pp.).

Shows the interrelations between wild and cultivated plants, especially as regards the effects of fungi upon such crops as lettuce, celery, spinach, etc. Insists upon the necessity of keeping the plants healthy by proper cultivation, seeding, etc. If this be done, and then a fungicide used, its effect will be most marked (see Bot. Gaz. Apr., 1892, vol. XVII, pp. 113-118, under the title "Some fungi common to wild and cultivated plants," with a few changes in phraseology. An extract also given in Science, vol. XIX, Apr. 29, 1892, p. 243,  $\frac{1}{2}$  col). (J. F. J.)

(See also No. 1223.)

## II.—DISEASES OF FIELD AND GARDEN CROPS.

1065. [ANON.] **Lettuce mildew.** <Gard. Chron., 3d ser., vol. XI, London, Apr. 23, 1892, p. 534-535,  $\frac{1}{2}$  col.

Notes occurrence of *Bremia lactuce* in market gardens near London and quotes from W. G. Smith remedy for same. (J. F. J.)

1066. [ANON.] **Potato disease.** <Agr. Gaz. N. S. Wales, vol. III, Sydney, Jan., 1892, p. 77.

Gives a statement of the general method of cultivating the potato and says that the disease caused by *Phytophthora infestans* is not known in New South Wales. (J. F. J.)

1067. ARTHUR, J. C., and GOLDEN, K. E. **Diseases of the sugar-beet root.** <Purdue Univ. (Indiana) Agr. Exp. Sta. Bull. No. 39, vol. III, La Fayette, Apr. 13, 1892, pp. 55-62.

Describe a disease due to a bacterial parasite which affects in a marked degree the percentage of sugar derived from the beets. Beet scab, caused by *Oospora scabies* Thax., also described and illustrated. This disease originates from the soil and is caused by the spores lying there, derived from some previous root crop. Water core spots, the origin of which is unknown, also described (see Gard. Chron., London, June 4, 1892, p. 726; Exp. Sta. Rec., vol. III, July 1892, pp. 853-855; Agr. Sci., vol. VI, Aug. 1892, pp. 383-384; Gard. and Forest, vol. v, Apr. 27, 1892, p. 204). (J. F. J.)

1068. BAILEY, L. H. **Some troubles of winter tomatoes.** <Cornell Univ. Agr. Exp. Sta. Bull. No. 43, Ithaca, N. Y., Sept., 1892, pp. 149-158, figs. 4.

Describes "winter blight" of tomatoes, a disease affecting plants in the forcing houses. This attacks the leaves and sometimes kills the plants outright. Probably caused by bacteria, but is different from the bacterial disease of potatoes. No remedy yet known, but it is recommended to remove all diseased plants as soon as observed. If disease becomes very severe both plants and soil should be removed and a new start made. Common blight, caused by *Cladosporium fulvum*, also described. Spraying with ammoniacal carbonate of copper is recommended. Roots of plants are also attacked by nematode root galls. (J. F. J.)

1069. BEHRENS, I. **Ueber das Auftreten des Hanfkrebses im Elsass.** <Zeitsch. Pflanzenkrank., vol. I, Stuttgart, 1891, pp. 208-215.

Two fungi have been observed injuring hemp in Elsass, namely, a *Sclerotinia*, the species of which could not be ascertained, but seemed to be either *fuekeliana* or *libertiana*, and *Melanospora cannabidis* sp. nov. The author examined two crops from 1890 and 1891, and several stems from the first year's collection showed the presence of *Botrytis*. No *Botrytis*, however, was observed on material of the following year's crop, although the stems showed numerous hyphae of a fungus like those from the preceding year. By transferring this fungus upon bread, sclerotia developed very abundantly, but no *Botrytis*. The fungus proved to be a *Sclerotinia*, of which the species *libertiana* is well distinguished from *fuekeliana* by not having the *Botrytis* fructification during the mycelial stage. Further studies are necessary for the specific identification of this fungus. *Melanospora cannabidis* is red and occurs upon the base of the stems of hemp. It not only flourishes upon the hemp, but also upon the resting stage of *Sclerotinia*, which it destroys entirely. (T. H.)



- 1070.** BOS, J. RITZEMA. **De klaverkanker, eene zich meer en meer uitbreidende klaverziekte.** <Wageningen, May 16, 1892, pp. 13.

Contains a general sketch of the canker, which affects *Trifolium pratense* especially, due to *Sclerotinia trifoliorum*. Besides a description of the life history of this fungus, the author gives some statements as to the eradication of the disease, and recommends digging out the infested parts of the clover field and burning the plants in a pit which has been partly filled with quicklime. The disease has been observed in several places in Holland, especially in Gröningen, Zeeland, and North Brabant. (T. H.)

- 1071.** COBB, N. A. **Notes on the diseases of plants.** <Agr. Gaz. N. S. Wales, vol. 11, Sydney, Oct., 1891, pp. 616-624, pl. 2, figs. 5.

Gives notes on diseases of plants, as follows: Onion mildew, caused by *Peronospora schleideniana*, and for which Bordeaux mixture is recommended; tobacco mildew, caused by *Peronospora hyoscyami*; potato blight, murrain, or rot, caused by *Phytophthora infestans*, although not yet known in the colony, is fully described so that it may be known if it should appear. Bordeaux mixture is given as one preventive, clean culture and high molding being others; and banana disease, the cause of which is unknown, but may be due to a fungus attacking the roots. Mention is also made of the occurrence of bread mold on oranges, supposed to be caused by injury to the fruit. (For portion relating to diseased banana plants, see Bull. Bot. Dept. Jamaica, No. 31, May, 1892, p. 2; also, under title of "Banana disease in Fiji," Bull. Miscel. Infor. Royal Gard. Kew, No. 62, Feb., 1892, pp. 48-49.) (J. F. J.)

- 1072.** COBB, N. A. **Smut.** <Agr. Gaz. N. S. Wales, vol. 11, Sydney, Nov., 1891, pp. 672-677, figs. 4.

Describes the various forms of smut of cereals; caused in oats by *Ustilago avenae*; in wheat by *U. tritici*, *Urocystis occulta*, and *Tilletia foetens*; also describes smut in maize. Gives various methods of treatment, mainly hot water and "bluestone." These last are recommended for all the smuts. (J. F. J.)

- 1073.** C[OCKRELL], T. D. A. **The new coffee disease.** <Notes from Mus. Inst. Jamaica, No. 27 [Kingston], Oct. 29, 1892, p. 1.

Refers to disease of fungous origin affecting leaves of coffee. In appearance the disease resembles potato rot. The name of the fungus was not determined. (J. F. J.)

- 1074.** C[OCKRELL], T. D. A. **The sugar-cane fungus.** <Notes from Mus. Inst. Jamaica, No. 18 [Kingston], July 23, 1892, p. 1.

States that specimens sent from Trinidad affecting sugar cane belong to a species to be described as *Trullula sacchari* Ell. & Ev. Says also that a bacterial disease may be present, but of this there is as yet no absolute proof. (J. F. J.)

- 1075.** C[OOKE], M. C. **Tobacco disease.** <Gard. Chron., 3d ser., vol. 1x, London, Feb. 7, 1891, p. 173,  $\frac{3}{4}$  col.

Notes the occurrence of *Peronospora hyoscyami* in Australia, where it attacks tobacco leaves. Describes the appearance of the fungus, and suggests burning all diseased plants. Does not believe spraying with fungicides would be of any benefit in checking the disease. (J. F. J.)

- 1076.** DETMERS, FRED. **[Fungus on Lactuca.]** <Ohio Agr. Exp. Sta. Bull. No. 44, Columbus, Sept., 1892, pp. 145-146, figs. 3.

Describes general appearance of *Septoria consimilis*, introduced from *Lactuca scariola* to cultivated lettuce. (J. F. J.)

- 1077.** DETMERS, FRED. **Scab of wheat.** <Ohio Agr. Exp. Sta. Bull. No. 44, Columbus, Sept., 1892, pp. 147-149, figs. 2.

Describes appearance and mode of attack of *Fusisporium culmorum* W. Sm., causing wheat scab (see Am. Agr., vol. LI, Dec., 1892, p. 756). (J. F. J.)

- 1078.** HALSTED, B. D. **Anthraxnose in bean seeds.** <Gard. and Forest, vol. v, New York, Jan. 13, 1892, p. 18,  $\frac{3}{4}$  col.

States the disease is caused by *Colletotrichum lindemuthianum*. Describes general appearance of affected seed, and says that those showing disease did not germinate as well as healthy seed, and the plants were diseased. Advocates soaking seed in solution of 3 ounces of carbonate of copper, 1 quart of ammonia water, and 4 $\frac{1}{2}$  gallons of water. (J. F. J.)

- 1079.** HALSTED, B. D. **Some fungous diseases of the celery.** <N. J. Agr. Exp. Sta. Special Bull. Q, New Brunswick, Apr. 21, 1892, pp. 12, figs. 14.

Describes celery blight or "rust" as caused by *Cercospora apii*, giving an account of successful treatment with ammoniacal copper carbonate solution; celery leaf-spot due to *Phyllosticta apii* n. sp.; another leaf-blight, due to *Septoria petroselinii* var. *apii*; celery rust proper, due to *Puccinia bullata*; and a bacterial disease of celery that attacks and destroys the hearts of the plants. It is thought that ammoniacal copper carbonate solution can be successfully used for all three diseases (see also Am. Agr., July, 1892, vol. LI, pp. 426-427; Exp. Sta. Rec., vol. III, July, 1892, pp. 884-885). (J. F. J.)

1080. HUMPHREY, J. E. **The powdery mildew of the cucumber (*Erysiphe cichoracearum* DC.)** <Ninth Ann. Rept. Mass. Agr. Exp. Sta. for 1891, Amherst, 1892, pp. 222-226.

Describes the appearance and development of the disease. Recommends as a preventive a solution of sulphide of potassium (liver of sulphur), 1 ounce to 4 gallons of water. Stronger solutions injure the leaves. Ammoniacal carbonate of copper solution also effective, but vapor of sulphur better than either, care being taken not to have the sulphur burn (see No. 394). (J. F. J.)

1081. HUMPHREY, J. E. **The rotting of lettuce (*Botrytis vulgaris*, Fr.).** <Ninth Ann. Rept. Mass. Agr. Exp. Sta. for 1891, Amherst, 1892, pp. 219-222.

Describes the disease as due to *Botrytis*, possibly *B. vulgaris*, and traces its development. Considers *B. vulgaris* to be the conidial stage of some *Sclerotium*-producing *Periza*. Recommends clean culture and keeping plants in a healthy condition as best preventives (see No. 394). (J. F. J.)

1082. HUMPHREY, J. E. **Various diseases [of potato, etc.].** <Ninth Ann. Rept. Mass. Agr. Exp. Sta. for 1891, Amherst, 1892, pp. 226-235.

Preliminary notes on diseases of the following plants: Potato, caused by a species of *Macrosporium*; cucumber, caused by *Acremonium* (?) sp.; rye, caused by *Urocystis ocellata* Wallr., and also by *Puccinia rubigo-vera* (DC.) Wint.; cabbage, caused by *Plasmiodiophora brassicae* Wor.; celery, caused by a species of *Cercospora* or *Septoria*, probably that described by Chester as *S. petroselinii* var. *apii*, occurring in Delaware; clover, caused by *Uromyces trifolii* and *Polythrincium trifolii* Kze.; fish eggs, caused by *Achlya racemosa* Hild.; black poplar, caused by *Melampsora populina* (Jacq.) Lév.; chestnut, caused by *Marsonia ochroleuca* (B. & C.); also plum and tobacco diseases. (J. F. J.)

1083. JONES, L. R. **Plant diseases.** <Vt. Agr. Exp. Sta. Bull. No. 28, Burlington, Apr., 1892, pp. 15-36, fig. 1.

The following diseases are discussed: (1) Potato blight and rot; this was successfully treated by the use of Bordeaux mixture; the question whether it will pay to spray is answered in the affirmative; the expense of spraying and method of making and applying the mixture are given. (2) A new potato disease, differing in various respects from the ordinary blight, and thought to be possibly due to bacteria. (3) Potato scab, which is described mainly from the North Dakota Agr. Exp. Sta. Bull. No. 4 (see No. 382). (4) Apple and pear scab, both of which were successfully treated, ammoniacal copper carbonate solution being preferred to Bordeaux mixture, as it does not injure the foliage and is cheaper; directions are given for making and applying the fungicides. (5) Oat smut, which can be prevented by the Jensen hot-water treatment, and for which directions are given (see Exp. Sta. Rec., vol. III, July, 1892, pp. 891-892). (J. F. J.)

1084. KERR, CHAS. **Diseases of eggplants.** <Fla. Disp. Farm and Fruit Grower, n. ser., vol. IV, Jacksonville, Apr. 21, 1892, p. 307,  $\frac{1}{2}$  col.

Notes the "falling" of eggplants as due to *Pythium debaryanum*. Considers the "falling" the same as "damping off," and gives only remedy known to him as plenty of light and air and not too much moisture. (J. F. J.)

1085. MCALPINE, D. **Vegetable pathology.** <Dept. of Agr. Victoria, Bull. No. 14, Melbourne, Dec., 1891, pp. 21-50, pl. 3.

Gives more or less complete accounts of the following diseases: (1) Rust of wheat, describing its cause and life history, and giving a list of host plants; it is due to *Puccinia graminis*. (2) Wheat blight, due to *Septoria tritici*. (3) Club-root of cauliflowers, cabbages, etc., due to *Plasmiodiophora brassicae*, mentioning the conditions favoring the disease and giving a sketch of the life history of the fungus. (4) Beet leaf rust, caused by *Uromyces betae*. (5) Raspberry root fungus, the cause of which is stated to be *Rhizomorpha*. (6) Root-gall disease of cucumbers, due to a nematode worm. The descriptions of the diseases are accompanied by notes on remedies. (J. F. J.)

1086. LAMSON-Scribner, F. **The fungous diseases of plants.** <Proc. 16th Ann. Meeting East Tennessee Farmers' Convention, May 19 and 20, 1891, Nashville, 1891, pp. 16-25.

An address concerning various fungous diseases, and treating of smuts of corn, oats, and wheat; mildew of potato; potato rot and scab; rusts of wheat, corn, apple, and blackberry; and pear blight. Gives remedies for most of these, and discusses liquid and powder fungicides, with means of applying remedies, and mention of good results ensuing. Issued as a separate under title of "Address on the fungous diseases of plants," Nashville, 1891, 16°, pp. 31. (J. F. J.)

1087. SPEER, R. P. **Our rusted and blighted wheat, oats, and barley in 1890.** <Iowa Agr. Exp. Sta. Bull. No. 10 [Ames], Aug., 1890, pp. 391-400.

Refers to the fact that many kinds of oats, wheat, and barley are invariably injured by rust, and gives details of experiments. Mentions varieties planted, and notes that all varieties except Mansbury barley were badly rusted, most of them so badly as not to be worth harvesting. Discusses the change in climate due to the cultivation of the prairies in the State and shows the relation between climate and attacks of rust. States that cereals are never injured by rust where there are no great extremes of summer temperature and no severe spells of drought. Advocates sowing of clover to regenerate the land, and gives

## 1087. SPEER, R. P.—Continued.

as the result of observation and experiment the following: (1) If oats continue to be grown they should be sown as early in the spring as possible, and only such varieties as the Everett or improved American should be used; (2) of barleys the most valuable is the Mansbury, which should be sown early and raised in preference to oats of any variety; (3) all varieties of spring wheat are unreliable and should be discarded. The best varieties of winter wheat tested were Turkish and Golden Cross (see also Exp. Sta. Rec., vol. II, Dec., 1890, pp. 213-215). (J. F. J.)

## 1088. STURGIS, W. C. Preliminary report on the so-called "pole-burn" of tobacco. &lt;Ann. Rept. Conn. Agr. Exp. Sta. for 1891, New Haven, 1892, pp. 168-184.

Discusses the origin of the disease, due to a fungus, and caused by hanging the tobacco so close as to prevent free circulation of air, and by the presence of moisture, due to fogs, dew, etc. Describes the effects of the disease, and states it is due to a species of *Cladosporium*, which, by partially destroying the tissues of the leaf, gives access to bacteria. Describes methods of culture and gives remedies; the latter are, better ventilation and improved methods of curing, mainly by artificial heat (see Exp. Sta. Rec., vol. III, June, 1892, pp. 773-775). (J. F. J.)

## 1089. STURGIS, W. C. Stem-rot [of tobacco]. &lt;Ann. Rept. Conn. Agr. Exp. Sta. for 1891, New Haven, 1892, pp. 184-186.

Describes appearance of disease and states that it is due to a fungus referred provisionally to the genus *Botrytis*. Gives brief sketch of life history and names it *B. longibrachiatata*. As remedies, recommends cleanliness, burning all diseased stems and leaves, and having the barn floor sprinkled with air-slaked lime and sulphur. If floor be of earth, cover with clean, dry earth to depth of 1 inch. Fumigation by burning sulphur also recommended (see Exp. Sta. Rec., vol. III, June, 1892, pp. 775-777). (J. F. J.)

## 1090. THAXTER, R. Potato scab. &lt;Ann. Rept. Conn. Agr. Exp. Sta. for 1891, New Haven, 1892, pp. 153-160.

Reviews work of Bolley, Arthur, and himself on the disease, and quotes from Bolley as to the identity of surface and deep scab (see No. 382). Gives details of experiments in planting scabby tubers, and concludes that application of fungicides to plants is useless. Recommends (1) use of seed free from scab; (2) not to plant on land which has produced diseased crops of potatoes or beets or has been fertilized with manure from stock fed with scabby potatoes; (3) not to feed scabby tubers to stock without cooking; (4) fertilize with other materials than barnyard manure; (5) dig potatoes as soon as possible after maturity. Describes fungus producing the disease under name of *Oospora scabies*, n. sp., and discusses its position in classification (see Nos. 238 and 311; also Exp. Sta. Rec., vol. III, June, 1892, pp. 771-772). (J. F. J.)

## 1091. TRACY, S. M. Cooperative branch stations in the South. &lt;Rept. Sec. of Agr. for 1891, Washington, 1892, pp. 5-12 (reprint).

On p. 8 notes that *Puccinia coronata* attacks and kills *Holcus lanatus* when about ready to bloom. (J. F. J.)

## 1092. WINDMILLER, FR. How to prevent tomato rot. &lt;Am. Gardening, vol. XIII, New York, Apr., 1892, p. 221, § col.

Gives experience in planting tomatoes for two years in succession on same ground, and concludes it is necessary to plant crop on new ground each year if rot is to be prevented. (J. F. J.)

(See also Nos. 1053, 1105, 1107, 1108, 1172, 1192, 1196, 1204.)

## III.—DISEASES OF FRUITS.

1093. [ANON.] Apple scab (*Fusicladium dendriticum*). <Grev., vol. XX, No. 93, Sept., 1891, London, pp. 27-29.

Notes the receipt of strongly developed specimens of this fungus on leaves of the apple from different parts of the country [Great Britain] and a profusion of samples from Australia. The recommendations for treatment by spraying with fungicides are quoted from the U. S. Department of Agriculture Reports (see Gard. Chron., 3d ser., vol. x, Nov. 14, 1891, p. 580). (M. B. W.)

## 1094. [ANON.] Bladder plums. &lt;Gard. Chron., 3d ser., vol. IX, London, May 30, 1891, pp. 672-673, figs. 2.

Notes the disease to be due to *Taphrina* or *Exoascus pruni* and states a close connection exists between it and *Exoascus deformans* causing peach blister. (J. F. J.)

## 1095. [ANON.] Citron culture in Corsica. &lt;Gard. Chron., 3d ser., vol. XI, London, Jan. 30 and Feb. 6, 1892, pp. 149-150, 182-183.

In noticing a report of the British Consul at Ajaccio, refers to diseases affecting the tree. "White-root" is the worst. Due to a fungus attacking the cortical tissue of the root. Describes appearance. Recommends, (1) pruning to the quick all roots deprived of vitality and apportioning branches to correspond to root system, and then surrounding tree with deep trench with a free passage for overflow of water; (2) pruning affected roots and applying

**1095.** [ANON.]—Continued.

tar to cut ends (this gives best results): (3) aeration of roots, exposing them and filling in space with stones or charcoal and filling up about trunk of tree 15 inches above surface of ground. *Fumagine* (smut or citron black) also described. Destroyed by whitewashing tree as far as bark extends and spraying the leaves. Tobacco juice and soft-soap spray also gives good results. The branches should also be trimmed out so as to allow air to circulate freely. (J. F. J.)

1096. [ANON.] **Raspberry anthracnose.** <Am. Gardening, vol. XIII, New York, Apr., 1892, p. 239,  $\frac{1}{2}$  col.

Describes the disease and recommends plenty of air and sunlight between the canes. Before buds start, spray with sulphate of iron (2 pounds in 5 gallons of water); and if it appears later use Bordeaux mixture. Burn badly diseased canes. (J. F. J.)

1097. [ANON.] **The filbert fungus.** <Am. Agr., vol. LI, New York, Dec., 1892, p. 755,  $\frac{1}{2}$  col.

States that as the fungus affecting filberts has not yet been discovered, there is no method to be recommended to check it. It resembles black knot of plum and cherry, but probably belongs to a different genus. It is destructive to foreign varieties, but does not seem as yet to have attacked natives. (J. F. J.)

1098. ATKINS, JR., E. [Peach-rust and fire-blight.] <Dept. Agr. N. S. Wales, Bull. No. 4, Sydney, Feb., 1891, p. 24.

Notes the occurrence of the diseases at Ermington, and says lime will prevent the former. (J. F. J.)

1099. BAILEY, L. H. [Fruit spot of plum.] <Cornell Univ. Agr. Exp. Sta. Bull. No. 38, Ithaca, N. Y., June, 1892, p. 56, fig. 1.

Notes disease affecting the fruit, referred by Humphrey to a species of *Phoma*. (J. F. J.)

1100. "BEDFORD FARMER." **Fungous disease in orange trees.** <Agr. Jour. Cape Colony, vol. IV, Cape Town, Nov. 19, 1891, p. 118,  $\frac{3}{4}$  col.

Describes a disease affecting the bark of orange twigs. Ashes and sulphur applied to stem of tree said to stop the disease. Supposed to be spread from tree to tree by water used in irrigating. (J. F. J.)

1101. BEINLING, E. **Ueber das Auftreten von Rebenkrankheiten im Grossherzogtum Baden im Jahre 1891.** <Zeitsch. Pflanzenkrank., vol. II, Stuttgart, 1892, pp. 207-210.

The vine diseases in Baden in 1891 were especially mildew, black rot, and the so-called false mildew, due to *Peronospora viticola*. *Sphaeceloma ampelinum*, the well-known anthracnose, has not been observed. Root mold, due to *Dematophora necatrix*, is, on the other hand, widespread and seems to increase every year. (T. H.)

1102. BESSEY, C. E. **The smut of Indian corn.** <Ohio Agr. Exp. Sta. Bull. No. 10, vol. III, 2d ser., Columbus, Nov., 1890, pp. 264-272, figs. 2.

Describes the general appearance of the disease and its wide prevalence. Opinions differ as to its effect on cattle, as shown by letters quoted. Describes the structure and growth of the spores, and discusses the question of how to reduce the quantity of smut. Clean cultivation, rotation of crops, destruction of infected plants, and use of clean seed are all said to have influence in reducing the amount. (J. F. J.)

1103. BRIDLE. [Windsor pear-blight.] <Dept. Agr. N. S. Wales, Bull. No. 4, Sydney Feb., 1891, p. 25.

States that disease is overcome to a certain extent by grafting the Windsor on another stock. (J. F. J.)

1104. BRUNK, T. L. **Pear stocks.** <Tex. Agr. Exp. Sta. Bull. No. 9, College Station, May, 1890, pp. 5-22, figs. 7.

Refers to susceptibility of certain varieties of pears to blight, stating that Le Conte and Kieffer are less subject to the disease on well drained soils in the Gulf States on their own roots than on French stock. Root rot of pears seems to be caused by *Ozonium auricomum*, which also affects cotton and other plants. Describes the effects of the disease in pear trees. (J. F. J.)

1105. CHESTER, F. D. **Report of the mycologist.** <Third Ann. Rept. Del. Agr. Exp. Sta. for 1890, Newark, 1891, pp. 45-91, figs. 15.

Gives details of experiments in various vineyards to prevent black rot and anthracnose. Tables of the product of the vines and statements of the money value of the sprayings are given. In a general way the experiments point to Bordeaux mixture as the best fungicide with which to treat badly infected vineyards, out when the disease has been brought under control after one or two seasons work, carbonate of copper and carbonate of ammonia mixture is equally as effective and less expensive. Bordeaux mixture, while acting as a fungicide, possesses the additional advantage of stimulating the growth of the vines. It also controls anthracnose. An experiment in bagging grapes is also described, several periods of infection being mentioned. These seem dependent upon weather conditions. Directions are given for

## 1105. CHESTER, F. D.—Continued.

preparing and applying the various fungicides used, and the spraying apparatus necessary is described. In experiments upon pear and quince leaf-blight, it was found that modified eau céleste, and carbonate of copper and carbonate of ammonia mixture gave the best results and were the two cheapest fungicides employed. An experiment with potato rot (*Phytophthora infestans*) is described, and Bordeaux mixture is noted as effectually controlling the disease. Bitter rot of the apple was experimented with, and sulphide of potassium gave fairly good results when used in the proportion of one-half ounce per gallon of water. Gives the results of a study of leaf spot of alfalfa produced by *Pseudopeziza medicaginis*, describing characters and life history as shown by artificial cultures. Rot of scarlet clover caused by *Sclerotinia trifolium* also described and its life history discussed. Scab of wheat caused by *Fusarium culmorum* described. Black rot of sweet potato (*Ceratocystis fimbriata*) was experimented with, and it was found that diseased soil will produce the disease even in healthy roots, that the soil can be rendered free of germs by sterilization or heat, and that plants grown from diseased tubers will probably become diseased. (J. F. J.)

## 1106. COBB [N. A.]. [Fungous diseases of fruit trees]. &lt;Dept. Agr. N. S. Wales, Bull. No. 4, Sydney, Feb., 1891, pp. 19-22.

A general statement as to damage caused by fungi and their mode of growth and dissemination. Particular mention made of Windsor pear blight, thought to be caused by same fungus, as that causing apple scab, and for which ammoniacal copper carbonate is recommended; shot-hole fungus; bitter rot of apple, for which carbonate of copper and sulphide of potassium is recommended; strawberry leaf-blight, to be treated with Bordeaux mixture or 1 pound hyposulphite of soda in 10 gallons of water before disease appears; anthracnose of the vine, leaf spot, fire blight, peach rust, plum rust, and fig blight were incidentally mentioned. Peach rust sometimes goes by the name of yellows. (J. F. J.)

## 1107. COBB, N. A. Plant diseases and how to prevent them. &lt;Agr. Gaz. N. S. Wales, vol. III, Sydney, Apr., 1892, pp. 276-303, pl. 4, figs. 26.

Treats of the diseases mentioned below, giving sketch of life history of the fungus and recommendations of preventives. (1) Of the apple: (a) Apple scab or "Tasmanian black spot," caused by *Fusicladium dendriticum*, for which is recommended ammoniacal carbonate of copper, modified eau céleste, or Bordeaux mixture; (b) powdery mildew, caused by *Podosphaera kunzei* Lévl., for which ammoniacal carbonate of copper or modified eau céleste are recommended; (c) bitter or ripe rot, caused by *Glaesporium versicolor* B. & C., and treated with ammoniacal copper carbonate; (d) moldy core, treated by modified eau céleste or ammoniacal copper carbonate; (e) water core; (f) an obscure disease causing the fruit to become distorted and misshapen. (2) Diseases of pears: (a) Pear scab or Windsor pear-blight, caused by *Fusicladium pyrinum* and treated by same fungicides as apple scab; (b) leaf-blight (*Entomosporium maculatum*), which has not appeared in Australia. (3) Shot-hole disease of apricot and other stone fruits, caused by *Phyllosticta circumscissa* and treated with Bordeaux mixture, ammoniacal copper carbonate, or eau céleste. (4) Diseases of the vine: (a) Anthracnose or "black spot," caused by *Glaesporium ampelinum* Sacc., and treated by cutting off and burning affected parts, using lime and sulphur and applying Bordeaux mixture or eau céleste; (b) tufted leaf-blight, caused by *Cercospora viticola*, for which Bordeaux mixture is recommended. (5) Strawberry leaf-blight, caused by *Sphaerella fragariae*, for which burning the diseased leaves and spraying with Bordeaux mixture or ammonia carbonate of copper is recommended. (6) Pumpkin-leaf Oidium, caused by *O. eyssiphoideis*, treated with flowers of sulphur or Bordeaux mixture. (7) Powdery mildew of rose, caused by *Sphaerotheca pannosa* and treated with flowers of sulphur or Bordeaux mixture. The formula for carbonate of copper and descriptions of spraying apparatus are also given. (J. F. J.)

## 1108. COBB, N. A. Plant diseases and how to prevent them. &lt;Agr. Gaz. N. S. Wales, vol. III, Sydney, June, 1892, pp. 436-439, figs. 3.

Describes, (1) "Pourridie or moldy root of the vine," caused by *Agaricus melleus*; recommends as a remedy thorough drainage. (2) Tufted leaf-blight of the bean, caused by a fungus which is not named; recommends rotation of crops and advises trial of Bordeaux mixture. (3) Apple canker, caused by some mechanical injury to the bark which is seized upon by some fungus and the healing thereby prevented. Pruning and the use of whitewash are recommended as remedies. (J. F. J.)

## 1109. CRAIG, JOHN. A destructive disease affecting native plums. &lt;Ottawa Nat., vol. VI, Ottawa, Nov., 1892, pp. 109-112, fig. 1.

Refers to disease caused by *Cladosporium carpophilum* and quotes description given by Pammel, of Iowa. Describes the characters and notes the varieties affected. Recommends use of weak solution of copper sulphate, 1 ounce to 25 gallons of water. (J. F. J.)

1110. CRAIG, J. *Fusicladium* on cherry. <Ottawa Nat., vol. VI, Ottawa, Nov., 1892, p. 115.

Refers to the presence of *Fusicladium dendriticum* on the fruit and foliage of cherry causing great loss where occurring. (J. F. J.)

## 1111. DIVISION OF VEGETABLE PATHOLOGY. Pear blossom-blight. &lt;Fla. Disp. Farm, and Fruit Grower, n. ser., vol. IV, Jacksonville, Apr. 21, 1892, p. 304, ½ col.

A letter written from the U. S. Department of Agriculture to L. B. Wombwell, State commissioner of agriculture, describing the method of spread of the disease by insects. Its spread through the orchard may possibly be prevented by spraying at the time of blooming. (J. F. J.)

1112. DOBSON, W. R. **Diseases of plants [peach rot].** <St. Louis Republic, St. Louis, May 15, 1892,  $\frac{1}{2}$  col.

Refers to the great destruction caused by rot (*Monilia*), and considers best remedy burning diseased peaches and branches. A dilute solution of copper and ammonium carbonate said to prevent the rot, but to injure the leaves (see also Colman's Rural World, vol. XL, May 26, 1892, p. 163,  $\frac{2}{3}$  col.). (J. F. J.)

1113. GARMAN, H. **Bordeaux mixture for apple pests.** <Ky. Agr. Exp. Sta. Bull. No. 44, Lexington, Jan., 1893, pp. 32, figs. 3.

Describes the appearance of apple rot caused by *Glæosporium versicolor*. Discusses the source of the rot and gives the microscopical characters of the fungus. This is followed by details of a number of experiments. The results of these show that Bordeaux mixture causes an increase in size of leaves, in numbers and size of fruits, prevention of scab and leaf spot, and a lessening of injury from rot. Apple scab can be treated with the same fungicide as rot. (J. F. J.)

1114. KELLERMAN, W. A. **Vegetable pathology, May.** <Jour. Columbus Hort. Soc., vol. VII, Columbus, Ohio, July, 1892, pp. 70-71.

Notes that peach curl has been abundant and describes its general characters. Refers also to black knot and bramble rust, advocating the destruction of weeds to prevent various species of fungi from infesting cultivated crops. (J. F. J.)

1115. [KIMBER, W.] **Visit to Angaston.** <Gard. and Field, vol. XVII, Adelaide, Feb. 17, 1892, p. 186,  $1\frac{1}{2}$  col.

Gives an account of apple orchard badly affected by *Fusicladium dendriticum*. (J. F. J.)

1116. MACOWAN, P. **Leaf-blight and powdery mildew in fruit trees.** <Agr. Jour. Cape Colony, vol. IV, Cape Town, July 16, 1891, pp. 1-3, figs. 2.

Gives figures of amount of fruit sent out from California and refers to the work required to combat fungous pests in America. Quotes Circular No. 10 (treatment of nursery stock for leaf-blight and powdery mildew) of the Division of Vegetable Pathology. (J. F. J.)

1117. MCALPINE, D. **Report on peach and plum leaf-rust (*Puccinia pruni*).** <Dept. of Agr. Victoria, Bull. No. 14, Melbourne, Dec., 1891, pp. 138-148.

Describes the disease and gives the life history of the fungus causing it. Notes the varieties of fruit affected the distribution of the disease, and suggests various remedies, among them the use of Bordeaux mixture and sulphate of iron dissolved in water at the rate of 1 pound to 8 gallons. (J. F. J.)

1118. [MEEHAN, THOS.] **Black knot in the plum.** <Meehan's Monthly, vol. II, Germantown, Pa., June, 1892, p. 93,  $\frac{1}{2}$  col.

Mentions various hosts of *Plowrightia morbosa*, and states that it is probably this same fungus which produces knots on the roots of young peach trees near the collar. (J. F. J.)

1119. MILLS, —. **[Fire blight.]** <Dept. of Agr. N. S. Wales, Bull. No. 4, Sydney, Feb., 1891, p. 24.

Notes the occurrence of fire blight at Dundas and remarks upon its rapid spread. (J. F. J.)

1120. PULVER, —. **[Peach rust.]** <Dept. Agr. N. S. Wales, Bull. No. 4, Sydney, Feb., 1891, p. 24.

Notes occurrence of disease at Wagga Wagga, where it is called "yellows." (J. F. J.)

1121. [ROBIN, A. B.] **Diseased cherry trees.** <Gard. and Field, vol. XVII, Adelaide, Feb., 1892, pp. 182-183,  $1\frac{1}{10}$  col.

Records a disease of cherry trees in Nuriootpa [identified by N. A. Cobb as due to *Monilia fructigena*]. On p. 183 a solution of sulphate of iron is recommended by Cobb as a spray. (J. F. J.)

1122. SCOBIE, —. **[Discussion of fruit-tree diseases.]** <Dept. Agr. N. S. Wales, Bull. No. 4, Sydney, Feb., 1891, pp. 23-24.

Mentions various diseases observed, such as apple scab, bitter rot, strawberry leaf-blight, disease of the vine, fire blight, and peach and plum rust. (J. F. J.)

1123. [VARIOUS.] **Pear blight.** <Ann. Rept. State Board Hort. of Cal. for 1891, Sacramento, 1892, pp. 414-415.

A discussion upon the subject, some considering the disease occurring on California trees to be true pear blight (*Bacillus amylovorus*) and others as something different. (J. F. J.)

(See also Nos. 1057, 1061, 1083, 1085, 1086, 1112, 1142, 1157, 1158, 1172, 1182, 1204, 1210, 1215.)

## IV.—DISEASES OF FOREST AND SHADE TREES.

1124. [ANON.] [Forest tree fungi.] <Gard. and Forest, vol. III, New York, July 16, 1890, p. 352, 8 lines.

Notes *Glæosporium aridum* on ash and *Microstoma juglandis* on leaves of hickory as being abundant. (J. F. J.)

1125. [ANON.] Pine blister. <Gard. Chron., 3d ser., vol. IX, London, May 9, 1891, pp. 598, 599, fig. 1.

States that the disease is caused by *Peridermium pini*, and believes some connection exists between it and *Coleosporium senecionis*. Recommends removal of Groundsel (*Senecio jacobæa*) from vicinity of trees. (J. F. J.)

1126. BRUNCHORST, I. Nogle sygdomme i de vestlandske træplantninger. <Naturen, vol. XV, Bergen, Sept., 1891, pp. 257-269, pl. 1.

*Pinus sylvestris* and *Larix europæa* are often injured in Norway by fungi. The author gives a popular account of some of these diseases, accompanied by some figures giving the Norwegian names for the diseases, but omitting the scientific names of the fungi. (T. H.)

1127. [EDITORIAL.] [Sycamore blight.] <Gard. and Forest, vol. III, New York, June 18, 1890, p. 304,  $\frac{1}{2}$  col.

Notes the occurrence of *Glæosporium nervisequum* on Sycamore trees in Central Park, N. Y. Asks for reports of occurrence in other places. (J. F. J.)

1128. J. —. Fungoid growth on trees. <The Garden, vol. XXXIX, London, Jan. 24, 1891, p. 88,  $\frac{1}{2}$  col.

Notes the occurrence of decay in trees and ascribes a particular case to the growth of fungous mycelium in a post near by. This fungus eventually attacked the roots of the tree. Another tree was found to have been infected by mycelia from a plank lying in contact with the roots. (J. F. J.)

1129. M. —. Destruction of tree roots by fungi. <Agr. Jour. Cape Colony, vol. III, Cape Town, Mar. 19, Apr. 9, 1891, pp. 169-170, 182-183.

Notes that the common root destroyers of South Africa are *Agaricus melleus* and *Polyporus sulphureus*. Gives a sketch of the life history of each. For the first he recommends the removal of the earth about the collar of the tree and then the application of sulphate of iron or sulphate of copper, filling in again with fresh loam. For *Polyporus* there is no cure. The latter gains an entrance into the tree trunk through wounds in the bark (see Gard. Chron., 3d ser., vol. IX, June 13, 1891, p. 734, 2 col.) (J. F. J.)

1130. [MEEHAN, THOS.] Diseases in Rhododendrons. <Meehan's Monthly, vol. II, Germantown, Pa., June, 1892, p. 89, 1 col.

Describes the work of a fungus similar to that attacking pear trees. Also notes work of mycelium of a species of *Agaricus* attacking the roots. Flowers of sulphur destroyed the *Agaric* and the leaves recovered their normal green color. Suggests that copper solution might destroy the fungus working on the branches. (J. F. J.)

1131. OLLIFF, A. SYDNEY. Diseased pepper tree. <Agr. Gaz. N. S. Wales, vol. II, Sydney, Nov., 1891, p. 670.

States that the disease is due to a fungus arising from the presence of honeydew caused by a species of scale insect. Recommends kerosene emulsion as a remedy for the scale and thus a preventive of the fungous growth. (J. F. J.)

(See also Nos. 1046, 1062, 1082.)

## V.—DISEASES OF ORNAMENTAL PLANTS.

1132. [ANON.] [New primula disease.] <Am. Florist, vol. VII, Chicago and New York, Dec. 31, 1891, p. 454,  $\frac{1}{16}$  col.

Notes a mildew of primula new to Great Britain, due to *Ramularia primulae* Thüm. (J. F. J.)

1133. [ANON.] Pancratiums diseased. <Gard. Chron., 3d ser., vol. IX, London, Feb. 7, 1891, p. 182,  $\frac{1}{8}$  col.

The disease is caused by *Saccharomyces glutinis*. Recommends removal and burning of soil where bulbs are growing, and destruction of all diseased portions of plants. Soak bulbs in solution of potassium sulphide and use every means to have healthy plants. (J. F. J.)

1134. [ANON.] The carnation rust. <Gard. and Forest, vol. V, New York, Jan. 13, 1892, pp. 18, 19, figs. 2, 1  $\frac{1}{2}$  col.

Notes the extent of the disease in this country caused by *Uromyces caryophyllinus*. Thinks cuttings dipped in Bordeaux mixture will be free from disease. (J. F. J.)

1135. ARTHUR, J. C. **Fungus on carnations.** <Am. Florist, vol. VII, Chicago and New York, Jan. 7, 1892, p. 462,  $\frac{1}{2}$  col.

States disease to be a rust known long ago in Europe and only recently brought to this country. The fungus may be recognized by brown spots on the leaves and stems  $\frac{1}{16}$  to  $\frac{1}{4}$  of an inch long, filled with a dark, loose powder, which readily comes off on the fingers. Suggests use of only healthy cuttings, clean cultivation, and fumigation of greenhouse with sulphur before planting in benches. (J. F. J.)

1136. HALSTED, B. D. **A chrysanthemum blight.** <Gard. and Forest, vol. IV, New York, Nov. 25, 1891, p. 560,  $\frac{1}{4}$  col.

Notes peculiar blotching of leaves due to species of *Septoria*. Gives brief sketch of growth. Spraying with copper compounds recommended. (J. F. J.)

1137. HALSTED, B. D. **Alternanthera leaf-blight.** <Gard. and Forest, vol. V, New York, Feb. 3, 1892, pp. 56-57,  $\frac{1}{2}$  col.

Describes appearance of plants affected by a fungus closely related to *Phyllosticta amaranthi*. Thinks either Bordeaux mixture or ammoniacal copper carbonate solution would be an effectual preventive. (J. F. J.)

1138. HALSTED, B. D. **Petunia blight.** <Gard. and Forest, vol. V, New York, Mar. 23, 1892, p. 141,  $\frac{1}{4}$  col.

Disease due to *Ascochyta petuniae*. Describes appearance. *Septoria*, perhaps new, and for which *S. petuniae* is provisionally proposed, was also found on leaves. Diseases can be held in check by use of fungicides. (J. F. J.)

1139. KELLERMAN, W. A. **Some fungous pests of greenhouse plants.** <Jour. Columbus Hort. Soc., vol. VII, Columbus, Ohio, Mar., 1892, pp. 20-23.

Gives descriptions of rust of carnations, caused by *Uromyces caryophyllinus*, and damping off, caused by species of *Pythium*. The best preventives seem to be good ventilation, not too high temperature, and good cultivation. In the discussion Mr. Warner stated that sulphur could be used to advantage in arresting the damping-off fungus. (J. F. J.)

1140. THAXTER, R. **Fungus in violet roots.** <Ann. Rept. Conn. Agr. Exp. Sta. for 1891, New Haven, 1892, pp. 166-167.

Notes the diseased condition of violets, which may or may not be connected with *Phyllosticta violae* attacking the leaves. Finds a fungus on the roots identified as *Thielavia basicola*, which is the same as *Helminthosporium fragile* and *Torula basicola*. Considers it doubtful if the fungus is wholly responsible for the diseased condition of the violet roots (see Exp. Sta. Rec., vol. III, June, 1892, p. 773). (J. F. J.)

(See also Nos. 1039, 1044, 1063, 1107, 1175, 1220, 1222.)

#### D.—REMEDIES, PREVENTIVES, APPLIANCES, ETC.

1141. ALWOOD, W. B. **Treatment of diseases of the grape.** <Va. Agr. Exp. Sta. Bull. No. 15, Blacksburg, Apr., 1892, pp. 31-43.

Notes the amount of damage caused by fungi on grapes, and treats the following topics: Preparations used as fungicides, formulæ for fungicides, methods of preparation, cost, manner of treatment of vineyards, results of tests made with fungicides, and "Is sprayed fruit unwholesome?" Recommends use of fungicides, especially weak Bordeaux mixture, and concludes that there is no danger from the use of sprayed grapes. (J. F. J.)

1142. ANDERSON [H. C. L.] **[Fruit-tree diseases.]** <Dept. Agr. N. S. Wales, Bull. No. 4, Sydney, Feb., 1891, pp. 25-26.

Refers to peach rust and success in treating trees with sulphate of iron. Wood ashes used as fertilizer. Large doses of kainit enabled the trees to throw off the disease better than those dressed with wood ashes or lime. Recommends spraying trees in winter with 1 pound of sulphate of iron in 8 gallons of water and applying potash in addition. (J. F. J.)

1143. [ANON.] **A new fungicide.** <Am. Florist, vol. VII, Chicago and New York, Mar. 3, 1892, p. 640,  $\frac{1}{16}$  col.

Mentions a dry powder made by C. H. Joosten, New York, that when applied is like a cloud of smoke and so reaches every part of the plant. (J. F. J.)

1144. [ANON.] **Copper salts for the prevention and palliation of the potato disease.** <Gard. Chron., 3d ser., vol. XI, London, Mar. 26, 1892, p. 403,  $\frac{1}{2}$  col.

Notifies the work of Messrs. Robt. Veitch & Son for the prevention of the disease, giving negative results with the copper, but successful results in earthing up. Notes also that a consular report records the successful use of copper sulphate and lime for potato disease in France. (J. F. J.)



- 1145.** [ANON.] **Copper solution [for tomatoes].** <Gard. Chron., 3d ser., vol. XI, London, Apr. 16, 1892, pp. 505-506,  $\frac{1}{2}$  col.

Gives directions for making spraying solution with  $4\frac{1}{2}$  pounds of sulphate of copper dissolved in  $3\frac{1}{2}$  gallons of water and  $3\frac{1}{2}$  pounds of carbonate of soda and  $\frac{1}{2}$  pound of molasses; stir, allow to stand twelve hours, and then dilute with 22 gallons of water. Spray two or three times during season, stopping when fruit begins to color. This is the remedy for mildew. (J. F. J.)

- 1146.** [ANON.] **History of the Bordeaux mixture.** <Rural New Yorker, vol. L, New York, Oct. 17, 1891, p. 741, 1 col.

Gives an account of the first use of Bordeaux mixture as a fungicide, and mentions many experiments since made with it. Notes that it is often improperly applied, and that it should not be used as a spray after the grapes begin to color. (J. F. J.)

- 1147.** [ANON.] **Mildew on strawberries.** <Gard. Chron., 3d ser., vol. XI, London, Jan., 1892, p. 58,  $\frac{1}{2}$  col.

Considers mildew due to method of cultivation. Recommends having beds slope toward south and plenty of air circulating. In house culture keep air stirring and strew sulphur about. Out of doors dressings of Bordeaux mixture would be beneficial. (J. F. J.)

- 1148.** [ANON.] **[Plum rot.]** <Am. Agr., vol. L, New York, Feb., 1891, p. 96,  $\frac{1}{2}$  col.

Recommends ammoniacal copper carbonate solution as a remedy, spraying first when plums are size of peas, and thereafter every six or seven days until the fruit is two-thirds grown. (J. F. J.)

- 1149.** [ANON.] **Potato culture.** <Ann. Rept. Sec. for Agr., Nova Scotia, for 1890, Halifax, 1891, pp. 60-65.

On p. 62 notes that nitrogenous fertilizers increase percentage of diseased tubers; with mineral fertilizers the percentage was much less. (J. F. J.)

- 1150.** [ANON.] **Potato disease.** <Nat. Provisioner, vol. IV, New York, Mar. 19, 1892.

Mentions experiments made in France to prevent potato disease with sulphate of copper, lime, and water called "bouillie Bordelaise." States that the addition of molasses enables the mixture to stick to the leaves and is not washed off by rain. (J. F. J.)

- 1151.** [ANON.] **Potato disease and the copper treatment.** <Gard. Chron., 3d ser., vol. XI, Feb. 6, 1892, London, p. 178,  $\frac{1}{2}$  col.

From the *Morning Post* it is learned that the Highland and Agricultural Society has been conducting experiments on potatoes. The spray of Bordeaux mixture has entirely failed to restrain the fungus of the potato blight. (M. B. W.)

- 1152.** [ANON.] **Renseignements sur la maladie des pommes de terre et sur les traitements effectués en 1891.** <Chron. Agr. du Canton de Vaud, vol. v, Lausanne, Mar. 10, 1892, pp. 94-99.

A notice of the results of experiments made by various persons at different places to prevent potato rot. The principal substance used was Bordeaux mixture and the treatment was generally successful. (J. F. J.)

- 1153.** [ANON.] **Revue Horticole.** <Nouv. Ann. Soc. d'Hort. Gironde, June, 1891, Bordeaux, pp. 108-109.

A note on the successful treatment of chlorosis with sulphate of iron. States that chlorosis had been thought to be due to lack of light, improper nutrition, etc., but the chlorosis spoken of was due to lack of iron. The remedy consisted in scattering around each diseased tree in February 250 grams of dry sulphate of iron. (M. B. W.)

- 1154.** [ANON.] **Rust in wheat.** <Gard. Chron., 3d ser., vol. x, London, Oct. 31, 1891, p. 521,  $\frac{1}{2}$  col.

Quotes from Mark Lane Express in relation to prize of £10,000 offered in Australia for successful preventive of wheat rust. A solution of copper sulphate (1 part to 400 of water) destroys the vitality of the spores, and spraying with 1 ounce of sulphate of iron in a gallon of water retarded appearance of rust, destroyed the rust when it appeared, and prevented its appearance for fourteen days afterward. (J. F. J.)

- 1155.** [ANON.] **Rust in wheat.** <Agr. Gaz. N. S. Wales, vol. III, Sidney, March, 1892, pp. 221-226.

Gives the substance of the recommendations of the wheat conference in relation to treatment for rust. (J. F. J.)

- 1156.** [ANON.] **Spraying to prevent damage by frost.** <Am. Gard., vol. XIII, New York, Apr., 1892, p. 226,  $\frac{1}{2}$  col.

States that when there is danger of a frost, if the plants be sprayed in the early morning with clear, cold water serious damage will be prevented. (J. F. J.)

1157. [ANON.] **The black knot of the plum and cherry.** <Am. Gard., vol. XIII, New York, Aug., 1892, pp. 478-480, pl. 2.

Mention of the usual methods of eradicating black knot, that is, cutting out and burning, and an outline of the New York State law passed against allowing the disease to remain in orchards. (J. F. J.)

1158. [ANON.] **The strawberry leaf disease.** <Gard. Chron., 3d. ser., vol. x, London, July 11, 1891, p. 53, fig. 1,  $\frac{1}{2}$  col.

Refers to disease caused by *Sphaerella fragariae* and gives as a remedy carbonate of copper 3 ounces, dissolved in 1 quart of water, diluted with 20 gallons of water; diseased leaves should also be burned. (J. F. J.)

1159. [ANON.] **The treatment of disease in plants by means of copper compound.** <Gard. Chron., 3d ser., vol. x, London, Aug. 15, 1891, p. 196,  $\frac{1}{2}$  col.

Refers to successful treatment of potato diseases by lime and copper sulphate; the same also used for disease of sugar beets caused by *Peronospora schachtii*. (J. F. J.)

1160. [ANON.] **Vermorel's appliances for the treatment of scale on orange trees, the pear-leaf slug, and other pests.** <Agr. Jour. Cape Colony, vol. IV, Cape Town, Oct. 8, 1891, pp. 80-82.

Describes the various appliances used for both insecticides and fungicides. (J. F. J.)

1161. [ANON.] **Visit to Angaston district.** <Gard. and Field, vol. XVII, Adelaide, Feb., 1892, pp. 184-186.

Notes successful use of eau céleste in combating the shot-hole fungus of apricot trees. Pear and apple scab also treated successfully. Gives a statement of discussion on use of fungicides to prevent fungous diseases, such as scab, curl-leaf, beet disease, etc. (J. F. J.)

1162. ARMSTRONG, L. **Carnation disease.** <Am. Gard., vol. XIII, New York, Dec., 1892, p. 762,  $\frac{1}{2}$  col.

Notes that the disease can be checked by using sulphur compound, made by subjecting sulphur and quicklime to intense heat; use 1 gill of this to 2 gallons of water, and syringe the plants twice a day. Compound seems to act by promoting healthy root action. (J. F. J.)

1163. ARTHUR, J. C. **Report of the botanical department [of the Indiana Agricultural Experiment Station].** <Fourth Ann. Rept. Ind. Agr. Exp. Sta. for 1891, Feb., 1892, pp. 23-28.

Gives a brief notice of the work of the station to prevent diseases of corn, oats, wheat, potatoes, beets, and carnations. (J. F. J.)

1164. BABO, C. VON. **Sulphuring vines for Oidium.** <Agr. Jour. Cape Colony, vol. IV, Cape Town, Oct. 22, 1891, p. 100,  $\frac{1}{2}$  col.

Gives directions for use of sulphur for Oidium, and states that rain causes it to lose its effectiveness. (J. F. J.)

1165. BARMY, DR. **Préservation contre les gelées de printemps.** <Prog. Agr. et Vit., 9th year, No. 27, Montpellier, July 3, 1892, pp. 5-6.

It has been long known that the production of artificial clouds by burning tar may prevent the killing of buds by frost in the spring. The author recommends using this treatment not only in spring, but during all the winter, when frost is expected to occur, so as to preserve the entire growth of the vineyard. (T. H.)

1166. BEDFORD, S. A. **Smut.** <Exp. Farms Rept. for 1891, Ottawa, 1892, p. 252.

Notes occurrence of smut on wheat in Province of Manitoba, and gives details of experiments made in 1889 for prevention. Bluestone gave better results than salt or scalding. (J. F. J.)

1167. BLERSCH, F. **Bluestone for steeping grain.** <Agr. Jour. Cape Colony, vol. IV, Cape Town, Sept. 10, 1891, pp. 61, 62, 1 col.

Gives formula for steeping wheat, and states that a  $\frac{1}{2}$  per cent solution of vitriol is strong enough to destroy smut. Does not recommend the Jensen hot-water treatment, because of the difficulty of maintaining the water at the specified temperature of 132° to 135° F. (J. F. J.)

1168. BLERSCH, F. **Steeping grain in vitriol.** <Agr. Jour. Cape Colony, vol. IV, Cape Town, Aug. 27, 1891, p. 46,  $\frac{1}{2}$  col.

Refers to experience of Gilfillan (see No. 1187), and states his belief that the bad results from the use of vitriol were due to other circumstances, such as seed wheat passing through a threshing machine, soaking wheat too long and then sowing in dry weather, or lack of lime in the soil. (J. F. J.)

1169. "BOSTON SUBURB." **Sand and damping off.** <Am. Gard., vol. XIII, New York, Apr., 1892, p. 226,  $\frac{1}{2}$  col.

Says the use of a layer of sand might prevent damping off of cuttings. (J. F. J.)

1170. BRUNK, T. L. [Spraying experiments and apparatus.] <Fourth Ann. Rept. Md. Agr. Exp. Sta. for 1891 [College Park], 1892, pp. 381-399, figs. 7.

Describes experiments with apples to prevent depredations by insects and fungi. Gives account of various fungicides, such as ammoniacal copper carbonate solution, carbonate of copper and carbonate of ammonia, kerosene emulsion and copper carbonate (each used in combination with Paris green), and improved ammoniacal copper carbonate. Believes kerosene emulsion, copper carbonate, and Paris green mixture to be effective in combating both insects and fungi attacking apple and pear. Gives successful results of spraying watermelon, cucumber, muskmelon, pumpkin, and squash vines with Bordeaux mixture to control *Gloeosporium lindemuthianum*. Tomatoes attacked by *Cladosporium fulvum* were sprayed with Bordeaux mixture and carbonate of copper mixture, but with little success. Strawberry leaf-blight was successfully treated with ammoniacal copper carbonate solution and Bordeaux mixture. Blackberry rust also treated, but without apparent success. The use of fungicides combined with grubbing out infected plants will eradicate this disease in time. Quince leaf-blight was treated successfully with Bordeaux mixture two times in early spring, and copper carbonate and carbonate of ammonia mixture two or three times in the latter part of the season. Descriptions, with illustrations, are given of various forms of spraying apparatus. (J. F. J.)

1171. BUTZ, GEO. C. Information on spraying fruits. <Pa. State College Agr. Exp. Sta. Bull. No. 19, State College, Apr, 1892, pp. 13, figs. 6.

Describes results of spraying to destroy both insect and fungous pests, giving formulæ for Bordeaux mixture and ammoniacal carbonate of copper, together with description and figures of various forms of pumps. (J. F. J.)

1172. CHESTER, F. D. A few common diseases of crops and their treatment. <Del. Agr. Exp. Sta. Bull. No. 15, Newark, Jan., 1892, pp. 16.

Discusses the present status of treatment of vine diseases by means of Bordeaux mixture, copper carbonate in suspension, copper soda hyposulphite, Johnson's mixture (copper sulphate and ammonium carbonate), and copper and ammonium carbonate mixture. Both copper soda hyposulphite and Johnson's mixture injured the foliage, while the copper and ammonium carbonate mixture it is believed promises good results. In discussion of pear leaf-blight considers that Bordeaux mixture and Paris green will give good results. In treatment of peach rot records good results from use of copper and ammonium carbonate mixture. Several diseases of potato are discussed, viz. that caused by *Phytophthora infestans* (which can be controlled by Bordeaux mixture), a bacterial disease, and one caused by *Macrosporium solani*. This last is also kept in check by Bordeaux mixture. Directions are given for the preparation of the various fungicides mentioned in the bulletin. (J. F. J.)

1173. CHESTER, F. D. Spraying with sulphide of potassium for the scab of the pear. <Del. Agr. Exp. Sta. Bull. No. 7, Newark, Mar., 1890, pp. 11-14.

Gives details of experiments for treatment of *Fusicladium pyrinum*. The solution of potassium sulphide had a strength of  $\frac{1}{2}$  ounce to a gallon of water, and the sprayed trees produced about 25 per cent more marketable fruit than the unsprayed. (J. F. J.)

1174. CHUARD, E. Adh rence aux feuilles des plantes de compos s cuivr ques destin s combattre leurs maladies. <Chron. Agr. du Canton de Vaud, vol. v, Lausanne, Mar. 10, 1892, pp. 99-101.

Refers to results obtained by Girard and notes difference in those from his own experiments. In order of adhesiveness Girard found Perret mixture to stand first, Masson mixture second, and ordinary Bordeaux mixture last. Chuard found eau c leste to be first, Masson mixture second, and Bordeaux mixture third. Believes different results arise from different formul  used in the two cases. Experiments were made with plants attacked by *Peronospora*. (J. F. J.)

1175. COBB, N. A. Dialogue concerning the manner in which a poisonous spray does its work in preventing or checking blight. <Agr. Gaz. N. S. Wales, vol. II, Sydney, Dec., 1891, pp. 779-786, figs. 6.

Describes, in the form of a dialogue, blight of the rose, with its mode of growth, and method of treating it by spraying with fungicides. Deals especially with the latter subject, stating that three sprayings of three seconds each, with intervals between long enough to become dry, were more effectual in spreading the fungicide than one spraying of nine consecutive seconds. (J. F. J.)

1176. C[OOCKE], J. H. The Malta potato disease. <Medit. Nat., vol. II, Malta, June, 1892, pp. 194-195.

Notes the destruction of potatoes caused by *Phytophthora infestans*, and states that sulphate of iron, 1 ounce to 4 gallons of water, proved an effective remedy. (J. F. J.)

1177. CRAIG, JOHN. Annual report of the horticulturist.—Fungicides. <Exp. Farms Ann. Rept. for 1891, Ottawa, 1892, pp. 144-148.

Gives results of experiments with fungicides for the prevention of apple scab, a modified eau-c leste solution giving the best results; for grape mildew and gooseberry mildew, potassium sulphide, 1 ounce in 3 gallons of water, gave the best results. Directions for making copper carbonate solutions are given. (J. F. J.)

1178. CRAIG, JOHN. **Apple-scab remedy.** <Orange Judd Farmer, vol. XI, Chicago, Mar. 19, 1892, p. 180,  $\frac{3}{8}$  col.

Gives directions for making carbonate of copper at home. (J. F. J.)

1179. DAVIS, G. C. **Benefits of lime with the arsenites.** <Farm, Field, and Stockman, vol. XV, Chicago, Feb. 27, 1892, p. 200, 1 col.

States that Bordeaux mixture in connection with arsenites is useful both as an insecticide and a fungicide. Recommends 4 pounds of lime and 2 pounds of copper sulphate to a barrel of water, adding  $\frac{1}{4}$  to  $\frac{1}{2}$  of a pound of some arsenite to the barrel. London purple or Paris green may be used. (J. F. J.)

1180. DESPEISSIS, J. A. **Mechanical application of insecticides.** <Agr. Gaz. N. S. Wales, vol. II, Sydney, Oct., 1891, pp. 600-608, pl. 2, figs. 15.

Describes various forms of apparatus for the distribution of fungicides and insecticides. Chief among them is the "Strawsonizer" and the Vermorel spraying pump and nozzle. (J. F. J.)

1181. E.—, C. **Steeping grain in sulphur and lime.** <Agr. Jour. Cape Colony, vol. IV, Cape Town, Oct. 8, 1891, p. 84,  $\frac{1}{8}$  col.

States that seed soaked in a mixture of sulphur and lime, 20 pounds of each in 100 gallons of water, produced a crop entirely free from smut. This was especially so with oats. (J. F. J.)

1182. FALCONER, [WM.]. **Gooseberry mildew.** <Meehan's Monthly, vol. II, Germantown, Pa., 1892, p. 61,  $\frac{1}{8}$  col.

Mulching ground may act as a partial preventive. Budding with Missouri currant increases the disease. Locality and cultivation have much to do with its presence or absence. (J. F. J.)

1183. FISCHER, A. **Remedy for the potato disease.** <Agr. Jour. Cape Colony, vol. IV, Cape Town, Oct. 22, 1891, p. 99,  $\frac{1}{8}$  col.

Notes good results obtained by Aimé Girard in use of Bordeaux mixture (100 parts of water, 2 parts bluestone, and 2 parts of lime). (J. F. J.)

1184. G.—, **Fungus on carnations.** <Am. Florist, vol. VII, Chicago and New York, Jan. 7, 1892, p. 462,  $\frac{1}{10}$  col.

Advises coating pipes [in greenhouses] with sulphur for prevention of disease. (J. F. J.)

1185. G.—, W. W. **The potato disease question.** <Gard. Chron., 3d ser., vol. X. London, Dec. 5, 1891, pp. 671, 672, 2 cols.

Thinks it fairly established that the Bordeaux mixture is a remedy for Phytophthora. Advises the selection of seed which will produce good crops, yet with tops suitable for treatment. (M. B. W.)

1186. GARDNER, EDW. **Steeping grain in sulphur and lime.** <Agr. Jour. Cape Colony, vol. IV, Cape Town, Oct. 22, 1891, p. 95,  $\frac{1}{8}$  col.

Recommends for smut, soaking in solution of  $1\frac{1}{2}$  pounds of sulphur, 3 pounds lime, and 4 gallons of water, letting it stand for eighteen hours, stirring it thoroughly after the first eight hours. (J. F. J.)

1187. GILFILLAN, E. T. **Steeping grain in vitriol.** <Agr. Jour. Cape Colony, vol. IV, Cape Town, July 30, 1891, p. 18,  $\frac{1}{4}$  col.

States that steeping grain in vitriol for smut prevents germination, while the use of lime was very satisfactory. (J. F. J.)

1188. GILLETTE, C. P. **Experiments with arsenites.** (Combining arsenites with fungicides.) <Iowa Agr. Exp. Sta. Bull. No. 10 [Ames], Aug., 1890, pp. 416-418.

Gives details of effects of combination of arsenites and fungicides on foliage. States that London purple in combination with Bordeaux mixture did not in the least injure peach or plum foliage in proportion of 1 pound to 50 gallons of Bordeaux mixture. One pound to 10 gallons injured plum to an extent of 10 per cent, but apple not at all. London purple when combined with simple sulphate of copper solution was very injurious, even when used at the rate of 1 pound to 200 gallons of solution. Applied with water in this proportion, no injury would result. The arsenites when combined with ammoniacal copper carbonate are generally less injurious than when used with water alone. (J. F. J.)

1189. GOFF, E. S. **Experiment in the treatment of apple scab.** <Eighth Ann. Rept. Wis. Agr. Exp. Sta., Madison, 1892, pp. 160-161.

Brief statement of results. Fungicides used were copper carbonate dissolved in ammonia and suspended in water, sulphur powder, and mixture No. 5. The last was most efficacious, but it injured the foliage. The results show that spraying before the flowers open is very important. (J. F. J.)

1190. GOFF, E. S. **Treatment of the potato blight.** <Eighth Ann. Rept. Wis. Agr. Exp. Sta., Madison, 1892, pp. 138-141, figs. 2.

Gives results of a series of experiments with Bordeaux mixture of varying strengths. The treatment was successful, as shown by an increased yield and freedom from blight. (J. F. J.)

1191. [GOODELL, H. H.] **Fourth Annual Report of the Hatch Agricultural Experiment Station of the Massachusetts Agricultural College,** Amherst, Jan., 1892, pp. 14, pl. 1.

On pp. 11 and 12, under head of "horticultural division," mentions favorable results of experiments with fungicides to prevent apple scab, peach and plum rot, pear and plum leaf-blight, and potato blight and rot. No details are given. (J. F. J.)

1192. HALSTED, B. D. **Field experiments with soil and black rots of sweet potatoes.** <N. J. Agr. Exp. Sta. Special Bull. M, New Brunswick, Nov. 23, 1891, pp. 1-17, pl. 1.

Gives details of experiments, with list of manures used (see Exp. Sta. Rec., vol. III, May, 1892, p. 703). (J. F. J.)

1193. H[ALSTED], B. D. **Spraying against pear blight.** <Gard. and Forest, vol. III, New York, Oct. 15, 1890, p. 505,  $\frac{1}{2}$  col.

Notes the value of spraying for prevention of leaf-blight, and the saving of a considerable amount of money on the crop. (J. F. J.)

1194. HAMMOND, —. **Spraying fruit.** <Farm, Field, and Stockman, vol. xv, Chicago, Feb. 6, 1892, p. 127,  $\frac{3}{4}$  col.

States that spraying apple trees (Wythe variety) with London purple, followed by a fungicide, caused, after a second double spraying, the leaves to fall from many trees. Ben Davis apple was not injured by a similar treatment. Vines sprayed with various solutions of sulphate of copper and sulphate of iron varied in their loss of fruit by black rot from 10 to 80 per cent. The best remedy was considered to be 2 pounds of sulphate of copper, 2 $\frac{1}{2}$  pounds of carbonate of soda, and 1 $\frac{1}{2}$  pints of ammonia to 40 gallons of water. Believes the latter might be increased 50 per cent. (J. F. J.)

1195. HINE, J. S. **Practical spraying at Ohio Experiment Station in 1891.** <Jour. Columbus Hort. Soc., vol. VI, Columbus, Sept., 1891, pp. 93-96.

Gives a statement of the work of the station to prevent fungous diseases and destroy insect pests. Notes that a dilute Bordeaux mixture (4 pounds of lime and 4 pounds of copper sulphate to 50 gallons of water) was as effective in preventing apple scab, leaf-spot, etc., as the old formula of 6 pounds of copper sulphate and 4 pounds of lime to 22 gallons of water. Claims the former is better for several reasons. Considers Bordeaux mixture gave the best results of any fungicide used, the dilute form giving as good effects as the other for many diseases. (J. F. J.)

1196. HUMPHREY, J. E. **Preventive treatment [of fungous diseases of plants].** <Ninth Ann. Rept. Mass. Agr. Exp. Sta. for 1891, Amherst, 1892, pp. 235-248, pl. 1.

Discusses the subject from the points of hygienic treatment and the use of fungicides, laying special stress upon good and clean cultivation. Describes the method of preparation of various fungicides, giving addresses of firms supplying chemicals, with prices. Mentions also methods of application of fungicides, and gives addresses of manufacturers of spraying pumps. Cautions the farmer against an unwise use of the fungicides, and details some experiences of those who have used the remedies recommended. In the concluding pages discusses various sorts of smut, those affecting oats, barley, wheat, corn, rye, and onions, giving directions for using the hot-water treatment [of Jensen]. The plate illustrates the forms of smut affecting various grains. (J. F. J.)

1197. JAMES, JOSEPH F. **Spraying for the prevention of plant diseases.** <Sci. Am. Sup. vol. XXXIII, New York, May 2, 1892, pp. 13635-13636.

Reviews in detail the advances made in this country and elsewhere during the past twenty years in the treatment of plant diseases and the prevention of insect injuries. Considerable space is devoted to a discussion of spraying from a hygienic standpoint. (B. T. G.)

1198. JAMES, JOSEPH F. **Wheat rust and smut.** <Science, vol. XX, New York, Aug. 12, 1892, pp. 93-94,  $\frac{1}{2}$  col.

Calls attention to error made in Bulletin No. 83 of the experiment station of Michigan, where treatment for wheat smut is recommended for wheat rust (see also Cult. and Count. Gent., vol. LXII, Aug. 11, 1892, p. 596). (J. F. J.)

1199. JENSEN, J. L. **Hot-water treatment for fungous [sic] diseases of cereals.** <Am. Agr., vol. LI, New York, July, 1892, pp. 410-411, 1 col.

Refers to idea that this treatment will prevent rust, but does not believe it will be at all efficacious. States that difference in climate causes a difference in length of time the seed should be treated for smut, being longer in warm than in cold climates. Believes sprinkling grain before immersing in hot water preferable to soaking. In his "improved method" the basket with the hot grain is placed for two minutes in a closed box. It is then spread on the floor and stirred for some minutes with a rake. Believes it would be best not to sow grain until four days after treating. (J. F. J.)

1200. KING, WM. R. **Gum in lemons.** <Fla. Disp. Farm and Fruit Grower, n. ser., vol. IV, Jacksonville, Aug. 18, 1892, p. 645,  $\frac{1}{4}$  col.

Gives directions for treatment of disease, scraping off gum, cutting away diseased bark, and washing with McMaster and Miller's insecticide, also spraying with same solution. The sores were painted with shellac varnish and the trees fertilized with 10 pounds of sulphate of potash each. (J. F. J.)

1201. KINNEY, L. F. **Fungicides and insecticides.** <R. I. Agr. Exp. Sta. Bull. No. 15, Kingston, Apr., 1892, pp. 11-25, figs. 6.

Gives the formula for Bordeaux mixture and ammoniacal copper carbonate solution; also the prices for copper compounds. Describes apparatus for spraying, the knapsack sprayer, and "Perfection" outfit. Discusses the use of fungicides in treating black rot of grapes, mainly by quoting from U. S. Department of Agriculture Reports, giving time of treatment and cost. For apple scab quotes from Ohio Agr. Exp. Sta. Bull. No. 9, vol. IV, n. ser., recommending dilute Bordeaux mixture (4 pounds of sulphate of copper and 4 pounds of lime in 50 gallons of water). Paris green may be used with the Bordeaux mixture as an insecticide. (J. F. J.)

1202. LODEMAN, E. G. **Combinations of fungicides and insecticides, and some new fungicides.** <Cornell Univ. Agr. Exp. Sta. Bull. No. 35, Ithaca, N. Y., Dec., 1891, pp. 315-338.

Gives details of experiments with carbonate of copper, sulphate of copper, hydrate of copper, borate of copper, and chloride of copper, all used in combination with arsenites. The results of the experiments are briefly as follows: The effect of ammoniacal carbonate of copper as a fungicide is not lessened when Paris green or London purple is added, and gave better results with  $1\frac{1}{2}$  ounces in 1 pint of ammonia than double the quantity in 22 gallons of water; but the combinations have a caustic effect on the foliage of most plants. Sulphate of copper with Paris green and London purple formed an unsatisfactory combination; hydrate of copper alone is not as effective as when applied with Bordeaux mixture, although it did little injury to the foliage; borate of copper has little fungicidal action and in combination with arsenites is caustic; chloride of copper gave better results than the Bordeaux mixture, but it must be weak ( $1\frac{1}{2}$  ounces in 22 gallons of water injured the foliage of apple and peach trees). Mention is made of experiments in other places. In a note (p. 338) the formulae for Bordeaux mixture and ammoniacal carbonate of copper are given. The only successful combination yet found is with Bordeaux mixture and the arsenites. With ammoniacal carbonate and the arsenites the foliage is usually seriously injured (see also Exp. Sta. Rec., vol. III, Washington, Mar., 1892, pp. 524-526). (J. F. J.)

1203. MARLATT, F. A. **A good spraying outfit for the general fruit-grower.** <Agr. Sup. Kansas Weekly Capital, Topeka, Mar. 3, 1892.

Mentions various spraying machines in use, and gives a list of articles, with prices, necessary for the work. Gives also addresses of firms manufacturing pumps. (J. F. J.)

1204. MAYNARD, S. T. **Experiments with fungicides and insecticides.** <Mass. Hatch Agr. Exp. Sta. Bull. No. 17, Amherst, Apr., 1892, pp. 1-32, pl. 11.

A report of work done at the station, at Northboro, and by various individuals under the direction of the horticulturist. The four fungicides used were Bordeaux mixture, ammoniacal carbonate of copper, sulphate of copper, and sulphate of iron. Short descriptions are given of the following diseases: Apple scab, pear leaf-blight, plum leaf-blight or shot-hole fungus, brown fruit rot, powdery mildew and black rot of the grape, potato rot, and black wart of plum and cherry. Experiments were made to prevent all of these, with generally good results. Paris green was used in combination with the Bordeaux mixture. The reports of the volunteer observers vary, but they note generally favorable results. Dr. Jabez Fisher describes a syringe for spraying, called by him the "Hydrospray." He also records good results in combating tomato rot by the use of 1 pound of copper sulphate in 1,000 gallons of water. The foliage was not injured and the spread of the fungus was checked. At Northboro, peach, plum, pear, and apple trees, grapevines, and black raspberries were treated. Bordeaux mixture injured the peach foliage, but ammoniacal solution checked the rot. Anthracnose of raspberries was successfully treated with Bordeaux mixture and copper sulphate, and potatoes were treated with Bordeaux mixture and Paris green with good results. It was also found that black knot of the plum could be destroyed by painting with "kerosene paste," made by mixing ordinary kerosene with French yellow or any other dry pigment. Crude petroleum would do equally well if thick enough not to spread over the limb (see Exp. Sta. Rec., vol. III, July, 1892, pp. 864-866). (J. F. J.)

1205. [MAYNARD, S. T.] **Outline of plans for using fungicides and insecticides for 1892.** <Mass. Hatch Agr. Exp. Sta. Bull. No. 17, Amherst, Apr., 1892, pp. 41-43.

Gives various treatments for apple, pear, plum, peach, grape, raspberry, blackberry, strawberry, and potato based on the previous year's experiments. (J. F. J.)

1206. [MAYNARD, S. T.] **Spraying apparatus.** <Mass. Hatch Agr. Exp. Sta. Bull. No. 17, Amherst, Apr., 1892, pp. 44-47, figs. 4.

Describes briefly horse apparatus, knapsack sprayers, and nozzles. Gives also statement of prices of chemicals. (J. F. J.)

1207. PAMMEL, L. H. **Experiments with fungicides.** <Iowa Agr. Exp. Sta. [Ames] Bull. No. 16, Des Moines, Feb., 1892, pp. 315-329, figs. 3.

Gives details of experiments to prevent corn smut, and records negative results when seed was treated by hot-water method. Soaking in ammoniacal copper carbonate solution gave partially favorable results, but copper sulphate the reverse. Experiments to ascertain if copper salts were injurious to vegetation were made with Bordeaux mixture, ammoniacal carbonate of copper, eau céleste, modified eau céleste, and ferrous sulphate, each in three different strengths. Injury to roots was most marked in the use of ammoniacal carbonate of copper. Rust of wheat is described and details are given of several treatments for prevention. Ammoniacal carbonate of copper and Bordeaux mixture were both used, but neither prevented rust (see Science, vol. XIX, Jan. 8, 1892, p. 23; Exp. Sta. Rec., vol. III, June, 1892, pp. 787-788). (J. F. J.)

1208. PEARSON, A. N. **Rust in wheat.** <Dept. Agr. Victoria, Bull. No. 14, Melbourne, Dec., 1891, pp. 12-15.

Mentions the results of experiments on sixty-five plats of wheat made at Port Fairy on rust in wheat. Ferrous sulphate was the only substance that had any useful effect. It was recommended, however, to sow early and use rust-resisting varieties of grain. (J. F. J.)

1209. PEARSON, A. N., ET AL., COMMITTEE. **Report on Smith Ellis's scheme for preventing rust in wheat.** <Dept. Agr. Victoria, Bull. No. 14, Melbourne, Dec., 1891, pp. 119-125.

An adverse criticism of a plan advocated by Mr. Smith Ellis to prevent wheat rust, in which it is shown that the author is not conversant with the history of the fungus causing the disease, and concluding with the statement that he had failed to satisfy any of the committee that his so-called specific was in reality such. (J. F. J.)

1210. PICHI, P. **Alcuni esperimenti fisiopatologici sulla vite in relazione al parassitismo della peronospora. Nota prima.** <Nuovo Gior. Bot. Ital. (Bull. d. Soc.), vol. XXIII, Firenze, Apr. 6, 1891, pp. 361-366.

Reports on preliminary laboratory and field experiments planned with a view of ascertaining if copper sulphate may not be absorbed by the vine through the roots, and transferred to the leaves, where its presence will form an obstacle to the entrance of the hyphae of the Peronospora. In laboratory experiment branches of healthy vines were kept in vases containing various strengths of copper sulphate solutions, together with proper controls. Both sets being treated with sowings of the zoospores of Peronospora, several of those in pure water were attacked by the parasite, while those in copper solutions were immune. In field experiments both solutions, of various strength, and the powdered copper sulphate were used, both being placed at the base of each vine, at the rate of from 2.5 grams to 1.25 kilograms per vine. The results of this treatment, while by no means proving an immunity from the disease caused by the presence of the sulphate, encourage the author in his hopes that such a method may be followed with success. Records the remarkable well-nigh impossible presence of crystals of copper sulphate in the leaves or branches maintained in a solution of the salt for twenty days. (D. G. F.)

1211. SMITH, F. C., SAGE, W., and ROBIN, A. B. [Report of experiments on fungous diseases of fruit trees at Angaston.] <South Australia Register, Nureootpa, Mar. 30, 1892.

Gives a summary of the results of experiments for apple and pear scab, shot-hole fungus of apricot, and peach leaf-curl. The fungicides used were ammoniacal copper carbonate solution, eau céleste, and Bordeaux mixture. Ammoniacal copper carbonate appeared to reduce apple scab. Bordeaux mixture gave the best results with shot-hole fungus of the apricot. None were useful in preventing pear scab, while all were effectual in treating peach leaf-curl. One sprayed peach tree that had for years been affected with curl was entirely free from it and produced 400 pounds of fruit. The knapsack pump is recommended for spraying. (J. F. J.)

1212. SHORE, ROBT. **Root knot on begonias.** <Am. Florist, vol. VII, Chicago and New York, Feb. 25, 1892, p. 626,  $\frac{1}{2}$  col.

States that there is no cure for the disease, but that it can be prevented by baking the soil or sprinkling lime with it before planting. Recommends sprinkling with limewater every eight or ten days. (J. F. J.)

1213. SHUTT, F. T. **Report on the effect of solutions of copper sulphate (blue vitriol), iron sulphate (green vitriol), and agricultural bluestone on the vitality of seed wheat.** <Ann. Rept. Exp. Farms for 1890, Ottawa, 1891, pp. 146-148.

Gives details of treatment with solutions of varying strengths, both sulphate of iron and agricultural bluestone, this last (composed of one-third copper sulphate and two-thirds iron sulphate), seriously injuring the vitality when used in a solution of 1 pound to 8 gallons of water and immersed for thirty-six hours. Treated with the same quantity of sulphate of iron, the vitality was 96.5 as against 55.5 and 40 per cent for bluestone and sulphate of copper, respectively. Sprinkling the seed with the three solutions gave 99.0, 79.5, and 72.5 per cent, respectively. The result of the experiment shows that sulphate of iron did not materially affect the vitality of seed wheat, while copper sulphate and agricultural bluestone did. Loose smut appeared on all the plats treated. The seed was allowed to dry for thirteen days before being sown. (J. F. J.)

1214. TAFT, L. R. **Report on the experiments made in 1889 in the treatment of apple scab in Michigan.** <Mich. Agr. Exp. Sta. Bull. No. 59, Agricultural College, Apr., 1890, pp. 30-42, figs. 6.

Gives details of series of experiments made with various fungicides, such as potassium sulphide, sodium hyposulphite, sulphur solution, copper carbonate and ammonia, and modified eau céleste. Modified eau céleste gave the best results (J. F. J.)

1215. THAXTER, R. **Further results from the application of fungicides to prevent the "spot" of quince (*Entomosporium maculatum*).** <Ann. Rept. Conn. Agr. Exp. Sta. for 1891, New Haven, 1892, pp. 150-152, pl. 1.

States that two rows of trees treated with Bordeaux mixture yielded 71½ baskets of marketable fruit, while two rows treated with ammoniacal carbonate of copper in 1890, and precipitated carbonate of copper in 1891 yielded only 7 baskets. Five rows untreated for two years yielded only one basket. The balance above cost of treatment with Bordeaux mixture was \$49.42 (see Exp. Sta. Rec., vol. III, June, 1892, pp. 770-771). (J. F. J.)

1216. TROOP, JAMES. **Treatment of powdery mildew and black rot [of grapes].** <Purdue Univ. Agr. Exp. Sta. Bull. No. 38, vol. III, La Fayette, Ind., Mar. 19, 1892, pp. 17-18.

States that powdery mildew of greenhouse grapes is controlled by potassium sulphide, 1 ounce to 5 gallons of water, and black rot by Bordeaux mixture, giving as a formula for the latter 12 pounds of sulphate of copper and 8 pounds of lime to 45 gallons of water (see Exp. Sta. Rec., vol. III, June, 1892, p. 781; also *Prairie Farmer*, vol. LXIV, June 11, 1892, p. 374). (J. F. J.)

1217. VEALE, HENRY. **Vitriol dressing for grain.** <Agr. Jour. Cape Colony, vol. IV, Cape Town, Aug. 27, 1891, p. 46, ½ col.

States that wheat treated for smut should not be steeped in vitriol, but in water for six hours, and then wet down with a solution of 2 ounces of vitriol to 1 gallon of water, afterwards drying the grain with slaked lime. Quotes from New Zealand School of Agriculture in regard to fungicides for smut. (J. F. J.)

1218. W. ———, N. J. DE. **Steeping grain in vitriol.** <Agr. Jour. Cape Colony, Cape Town, vol. IV, Oct. 22, 1891, p. 95, ¼ col.

Concludes that failure of seed to grow after immersion in blue stone solution was due to swollen condition of seed. Untreated seed germinates in less time than treated. (J. F. J.)

1219. WILLIS, J. J. **Bordeaux mixture as a preventive of the potato blight.** <Gard. Chron., 3d ser., vol. XI, Jan. 23, 1892, London, p. 106, 1 col.

Mentions the widespread use in the United States of Bordeaux mixture on grapes and says that its use against potato rot was suggested by the similarity of the fungus to that causing the brown rot of grapes. Gives an account of experiments in 1890 conducted by the Rhode Island State Agricultural Experiment Station on the use of Bordeaux mixture on potatoes. The results were that three sprayings increased the yield 10 per cent and five sprayings 34 per cent, the increased yield being due to the larger size of the tubers. (M. B. W.)

1220. WOOLEN, L. R. **The violet disease.** <Am. Florist, vol. VII, Chicago and New York, Feb. 11, 1892, p. 574, 1/10 col.

Gives as a remedy the use of air-slaked lime or even pouring strong limewater on the plants. (J. F. J.)

1221. Z——, X. Y. **The modern remedies for the potato disease.** <Gard. Chron., 3d ser., vol. X, London, Dec. 19, 1891, p. 742, ½ col.

Thinks there is as yet no remedy for the disease. (M. B. W.)

1222. ZIRNGIEHEL, DENYS. **The violet disease.** <Am. Florist, vol. VII, Chicago and New York, Feb. 4, 1892, p. 552, ½ col.

States that Italians combat the disease by use of Bordeaux mixture. (J. F. J.)

(See also Nos. 1010, 1021, 1035, 1037, 1045, 1047, 1056, 1058, 1059, 1065, 1068, 1070, 1071, 1072, 1078, 1079, 1080, 1081, 1083, 1084, 1085, 1086, 1088, 1089, 1090, 1093, 1095, 1096, 1100, 1105, 1106, 1107, 1108, 1109, 1111, 1113, 1114, 1116, 1117, 1121, 1129, 1130, 1131, 1133, 1134, 1135, 1136, 1137, 1138, 1139.)

#### E.—PHYSIOLOGY, BIOLOGY, AND GEOGRAPHICAL DISTRIBUTION.

1223. [ANON.] **Heteroecismal fungi.** <Gard. Chron., 3d ser., vol. IX, London, May 30, 1891, p. 683, ½ col.

Notes the statement by Plowright that he had produced *Cooma laricis* on the larch by infecting the tree with the teliospores of *Melampsora betulinae* from birch, and that Dr. Franzschel had found in Russia *Puccinia digraphidis* Soppitt growing on *Phalaris arundinacea* in vicinity of *Epidium convallariae*, and *P. agrostidis* on *Agrostis vulgaris* in vicinity of *Epidium aquilifol.* (J. F. J.)



1224. [ANON.] [Occurrence of *Sphærotheca lanestris* in Mississippi.] <Bot. Gaz., vol. XVI, Crawfordsville, Ind., Oct. 16, 1891, p. 297.

Notes that this species, previously supposed to be confined to *Quercus agrifolia*, has been found by S. M. Tracy on various species of oak in Mississippi and by Atkinson in Alabama. (J. F. J.)

1225. [ANON.] [Oöspores in *Phytophthora infestans*.] <Gard. and Forest, vol. III, New York, Sept. 10, 1890, p. 448,  $\frac{1}{2}$  col.

Calls attention to paper by Smorawski in which it is stated that mycelium of the potato-rot fungus produced conidia and also oögonia-like bodies, regarded by him as antheridia. The reviewer does not consider that Smorawski's idea is fully proven by his investigations. (J. F. J.)

1226. [BEACH, S. A.] Influence of copper compounds in soils upon vegetation. <N. Y. State Agr. Exp. Sta. Bull. No. 41, n. ser., Geneva, Apr., 1892, pp. 35-43, figs. 3, charts 7.

Gives details of experiments with peas, tomatoes, and wheat planted in soils containing 2 and 5 per cent of copper sulphate, mentioning the differences in germination, foliage, period of maturity, number and weight of seed, root system, etc. The results point to the fact that the presence of copper in the soil in large quantities is injurious to plant growth. (J. F. J.)

1227. COBB, N. A. Contributions to an economic knowledge of Australian rusts (*Uredinæ*). <Agr. Gaz. N. S. Wales, vol. III, Sydney, Mar., 1892, pp. 181-212, figs. 13.

A continuation of an article published in some previous numbers on the subject, detailing what has been found out concerning wheat rust, discussing the wheat, soil, rust, and weather; also detailing the results of an examination of rust-resisting varieties of wheat in the structure of the cuticle, the tensile strength of the leaves, and the presence of stomata. Appendices contain measurements of the thickness of wheat leaves, width of the same, the tensile strength, and notes on the number of stomata observed. (J. F. J.)

1228. CONN, H. W. Some uses of bacteria. <Science, vol. XIX, New York, May 6, 1892, pp. 258-263.

A popular description of the good results arising from the presence of bacteria, especially as related to farming industries. Points out the agency of the organisms in the production of butter, cheese, beer, vinegar, etc. (J. F. J.)

1229. COOKE, M. C. Ceylon in Australia. <Grev., vol. XX, No. 93, Sept., 1891, London, pp. 29-30.

After stating that certain species of fungi have a world-wide distribution, the author says that other species occur only in countries far apart. As an example of this he points out that many of the species of fungi characteristic of Ceylon occur also in Australia. A number of species are cited, these being mostly large forms, such as *Polyporei*, *Agaricini*, etc. (M. B. W.)

1230. DETMERS, FRED. A fungous enemy of plant lice. <Jour. Columbus Hort. Soc., vol. VII, Columbus, Ohio, Mar., 1892, pp. 14-16.

Describes *Empusa aphidis* as affecting various species of Aphis occurring on lettuce, radishes, chrysanthemums, etc. Believes the disease would be economically valuable if it could be introduced among plant lice affecting grain fields. (J. F. J.)

1231. DUFOUR, J. Einige Versuche mit *Botrytis tenella* zur Bekämpfung der Maikäfer-larven. <Zeitsch. f. Pflanzenkrank., vol. II, Stuttgart, 1892, pp. 2-9.

Several experiments are described to show the possibility of infesting larvæ of the May beetle with *Botrytis*. The fungus was taken from pure cultures upon potato and from dead larvæ which had been killed by the fungus. The result shows that infection can take place from living larvæ, but the spreading of the infection, especially in the field experiments, was less than stated by French authors. Many larvæ were observed to be able to resist the infection for the three months during which the experiments were made. (T. H.)

1232. DUGGAR, B. M. Germination of the teleutospores of *Ravenelia cassiicola*. <Bot. Gaz., vol. XVII, Bloomington, Ind., May 17, 1892, pp. 144-148, pl. 2.

Describes the general characters of the teleutospores and their germination and growth. (J. F. J.)

1233. [HUDSON, A. S.] Force of mushroom growth. <Pop. Sci. Monthly, vol. XXXIX, New York, Aug., 1891, p. 575,  $\frac{1}{2}$  col.

Refers to growth of mushrooms through a cement, asphalt, and gravel floor in a stable. One specimen came from an inch and a quarter below the surface. Where a second forced its way up the fragment of cement displaced by it was found a foot away. (J. F. J.)

- 1234. ROBERT. Ueber Giftpilze.** <Sitzungsber. d. Natur. Ges. d. Univ. Dorpat, vol. IX, Dorpat, 1892, pp. 535-554.

The author divides the cases of poisoning according to the various fungi which cause it, but includes merely those cases that are known from the Baltic Provinces. One group comprises poisoning by fungi, which contain muscarin, e. g., *Agaricus muscarius* and *Boletus luridus*; other cases are due to the milky juice of the species of *Lactarius* or of *Helvella*, which contains an acid named helvellic acid. The fourth group includes such as are due to *Amanita phalloides*, one of the most dangerous, since it looks very much like the edible *Agaricus campestris*. The author discusses at length the effect and the character of the diseases (see review by Em. Bourquelot, "Matières toxiques contenues dans les champignons vénéneux," in Bull. Soc. Mycol. France, vol. XIII, Paris, Mar. 31, 1892, p. 40). (T. H.)

- 1235. SNOW, F. H. Contagious diseases of the chinch bug.** <First Ann. Rept. Direc. Exp. Sta. Univ. Kan. for 1891, Topeka, Apr., 1892, p. 230, pl. 4, 1 map.

A detailed account of experiments conducted on diseases of the chinch bug, giving the laboratory observations and experiments, reports of field agents, estimates of value of crops saved, statement of effect of meteorological conditions, history of microphytous diseases of the bug, and a bibliography. The two fungi mainly relied upon, though not in pure cultures, are *Sporotrichum globuliferum* and *Empusa aphidis*. The mode of growth of these is described. Pure cultures of the former did not produce the disease in inoculated chinch bugs (p. 27). It was not possible to obtain pure cultures of *Empusa*, and no attempts at inoculation were made. A bacterial disease caused by *Micrococcus insectorum* was present and was communicated from infected to healthy bugs. The amount saved to 482 farmers is estimated in cash to be \$87,244.10, and in the same ratio to the 1,068 successful experiments, \$193,308. Pages 192-217 are occupied by a history of the diseases of the bug in the United States, therein are given extracts from many papers (see Exp. Sta. Rec., vol. III, June, 1892, pp. 833-835). (J. F. J.)

- 1236. WARD, H. M. The ginger-beer plant and the organisms composing it: A contribution to the study of fermentation yeasts and bacteria.** <Proc. Roy. Soc., London, vol. I, Jan. 20, 1892, pp. 261-265. Phil. Trans. Roy. Soc., London, vol. CLXXXIII, Sept. 26, 1892, pp. 125-197, pl. 6, figs. 6.

The author has investigated a remarkable compound organism concerned in the fermentation of home-made ginger beer, and the article is a brief notice of the work. The organism occurs as jelly-like yellowish white masses aggregated into brain-like clumps. It resembles the so-called *Kephir* yeast, but is not identical with it. The masses consist of a symbiotic association of specific yeasts and bacteria, morphologically comparable to lichens. Besides the essential species, other species of yeasts, bacteria, and mold fungi are casually associated. The various organisms were isolated by culture methods. The essential organisms are a yeast, *Saccharomyces pyriformis* n. sp., and a bacterium, *B. vermiforme* n. sp. Both are described. Two other forms are always found, *Mycoderma cerevisiae* and *Bacterium aceti*. The author has reconstructed the "ginger-beer plant" by mixing pure cultures of the two first-named plants. The action of plants thus synthetically produced is the same as the original, while the action of the bacteria alone on a saccharine medium differs from that exerted when it is associated with the yeast and from that exerted by the latter alone. (M. B. W.)

- 1237. WEBER, H. A. Analyses of mushrooms.** <Jour. Columbus Hort. Soc., vol. VII, Columbus, Ohio, Mar., 1892, p. 12.

Gives a table of analyses of mushrooms, morels, and white truffles. (J. F. J.)

(See also No. 1117.)

## F.—MORPHOLOGY AND CLASSIFICATION OF FUNGI.

### I.—GENERAL WORKS.

- 1238. [ANON.] Memorabilia.** <Grev., vol. XX, No. 93, Sept., 1891, London, p. 22.

Six species not in Saccardo's Sylloge, *Strobilomyces polypyrarnis* Hook., *Colletotrichum microspermum* Corda, *Zasmidium cellare* Fr., *Alytosporium fulvum* Fr., *A. croceum* Schw., and *A. pteridicola* Schw. *Triposporium cristatum* Patouillard is a synonym of *Spegazzinia tessartha* (B. & C.). (M. B. W.)

- 1239. BAILEY, F. M. Botany. Contributions to the Queensland flora: Fungi.** <Queensland Dept. of Agr. Bull. No. 7, Brisbane, Mar., 1891, pp. 33-36.

Contains descriptions of species of fungi new to the Queensland flora. (J. F. J.)

- 1240. BAILEY, F. M. Contributions to the Queensland flora.** <Queensland Dept. of Agr. Bull. No. 18, Brisbane, May, 1892, pp. 36.

On pp. 34-36 are given names of species of fungi new to the colony. No new species are described. (J. F. J.)

- 1241. BAILEY, F. M. [Report of the colonial botanist.]** <Ann. Rept. Dept. Agr. Queensland for 1890-'91, Brisbane, 1891, pp. 40-48.

Mentions three species of fungi found in the Bellenden-Ker expedition and five blights observed to have injured plants during the year. (J. F. J.)

- 1242.** BERLESE, A. N. *Icones fungorum ad usum sylloges saccardianæ adcomodatæ.* Fasc. I-III, pp. 1-118, pl. I-CXXIII, Patavii, 1890-'92.

Descriptions and illustrations of fungi given by Saccardo, with references to literature and descriptions of new species as follows: *Lophiostoma parvulum*, *L. nigricans*, *Lophi-diopsis* n. gen., with *L. nuculoides* (Rehm) as the type; *Titania* n. gen., with *T. berkleyi* proposed for *Diatrype titan* B. et Br.; *Passeriniella* n. gen., with *P. dichroa* (Pass.) as type; *Leptosphaeria socialis*, in stems of *Asparagus officinalis*; *L. kunzeana* in stems of *Typha latifolia*; *L. ellisiana* in dead stems of *Enothera biennis*, proposed for *L. subconica* Ellis; *L. hanzlinskyana* in stems of grasses; *L. rhopalospora*; *L. acutiusecula*, proposed for *L. acuta* Rehm; *Leptosphaeriopsis* n. gen., with *Lept. ophioboloides* Sacc. as type. *Gnomoniopsis* n. gen., with *G. chamæmori* (Fr.) as type; *Winterella* n. gen., with *W. tuberculigera* (Ell. and Ev.) as type. (J. F. J.)

- 1243.** COOKE, M. C. *Australian fungi.* <Grev., vol. xx, No. 93, Sept., 1891, London, pp. 4-7.

Gives descriptions of the following new species: *Strobilomyces ligulatus*, *S. fasciculatus*, *Hypocrella axillaris*, on grasses; *Phyllachora maculata* on *Eucalyptus*; *Dothidea inaequalis* on *Eucalyptus*; *Montagnella rugulosa* on *Eucalyptus*; *Physalospora microsticta*, *Trabutia parvicapsa* on *Acacia Anthostomella lepidosperma* on *Lepidosperma*; *Sphaerella crypta* on *Eucalyptus*; *Dimerosporium parvulum* on *Trema aspera*; *Asteronella epitrema* on *Trema aspera*; *Piggotia substellata* on *Eucalyptus*; *Leptothyrium aristatum* on *Eucalyptus*; *Stagonospora orbicularis* on *Eucalyptus*; *Stilbospora foliorum* on *Eucalyptus*; and *Strumella patelloidea*. (Cont. from vol. XIX, p. 92. See No. 555.) (M. B. W.)

- 1244.** COOKE, M. C. *Australian fungi.* Supplement to handbook. <Grev., vol. XXI, London, Dec., 1892, pp. 35-39.

The following new species are described, all but three (as noted) described by Cke. and Mass.: *Agaricus (Leptota) membranaceus*, *A. (Clitopilus) cyathoides*, *A. (Hebeloma) griseus*, *A. (Tubaria) strigipes*, *A. (Hypholoma) discretus*, *Polbitius candidus*, *Marasmius subroseus*, *Lenzites bifasciatus*, *Polyporus (Ovini) mylittæ*, *Dædalea illudens*, *Hydnum (Resup.) calcareum*, *Stereum pannorum*, *Cyphella longipes*, *Stephensia arenivaga*, *Diploderma sabulosum*, *Sphaerella goodieifolia* Cke., on leaves of *Goodia latifolia*; *Oospora rutilans*, *Monotospora fasciculata*, *Cercospora glycines* Cke., on leaves of *Glycine clandestina*; *Hymenula eucalypti* on leaves of *Eucalyptus*; and *Phyllosticta prostantheræ* Cke., on leaves of *Prostanthera lasianthos*. (J. F. J.)

- 1245.** COOKE, M. C. *Exotic fungi.* <Grev., vol. xx, No. 93, London, Sept., 1891, pp. 15-16.

Describes these new species of fungi: *Cordyceps speerigini* Mass. on ant (*Formica*), *Sphaerostilbe macovani* (Korb.), and *Uredo (Uromyces (?) ) aloes*. (M. B. W.)

- 1246.** COOKE, M. C. *Mushrooms and toadstools.* <Grev., vol. XIX, London, March, 1891, pp. 83-84.

Discusses the numbers of edible and poisonous British species of fungi. (M. B. W.)

- 1247.** COOKE, M. C. *New British fungi.* <Grev., vol. xx, No. 93, London, Sept., 1891, p. 8.

Describes *Kalmusia stromatica* Cke. & Mass., *Coryneum cammellie* on *Camellia*, *Ramularia petuniae* on *Petunia*. (M. B. W.)

- 1248.** COOKE, M. C. *New Zealand fungi.* <Grev., vol. XXI, London, Sept., 1892, p. 1.

Describes new species as follows: *Rhizopogon violaceus* Cke. & Mass. on ground. *Chromosporium pallescens* Cke. & Mass. among mosses, *Camarosporium solandri* on twigs of *Fagus solandri*. (J. F. J.)

1249. [ELLIS, J. B., AND ANDERSON, F. W.] *New species of Montana fungi.* <Bot. Gaz., vol. XVI, Crawfordsville, Ind., Mar. 16, 1891, pp. 85-86, pl. 1.

Gives description of plate illustrating article in February number, the two species illustrated being *Sporidesmium sortisporioides* E. & A. and *Æcidium liatridis* E. & A. (see No. 257). (J. F. J.)

- 1250.** M[ASSE], G. *Memorabilia.* <Grev., vol. XIX, London, June, 1891, p. 108.

Notes that *Thelephora suffulta* B. & Br., *T. retiformis* B. & C., and *T. reticulata* B. & C. are all forms of *T. pedicellata* L. Notices that a book on "British Edible Fungi," by M. C. Cooke, is in press. Also a note on *Emertella variegata* B. & Br. and *Inzengaea erythrospora* Borzi, the latter having been described by Harkness through mistake as a new genus, *Thelepospora*. (M. B. W.)

- 1251.** ROSTRUP, E. *Tillæg til "Grønlands Svampe, 1888."* <Meddelelser om Grønland, vol. III, Copenhagen, 1891, pp. 593-643.

Enumeration of fungi collected in Greenland since 1888. Some new species are described. *Hymenomyces* 58 sp., new—*Cyphella lateritia*; *Gasteromyces* 2 sp.; *Tremellaceæ* 5 sp.; *Ustilaginaceæ* 4 sp.; *Uredinaceæ* 3 sp.; *Taphrinaceæ* 1 sp.; *Discomycetes* 46 sp., new, *Cudio-nella fructigena*, *Neottiella vitellina*, *Sclerotinia vahliana*, *Phialea macrospora*, *Mollisia alpina*, *Cenangella hartzi*, *Godronia juniperi*, *Phacidium polygoni*, *Trochila rhodiolæ*, *Pseudopeziza axillaris*, *Glonium betulinum*, *Pyrenomyces* 57 sp., new, *Læstadia alchemilla*, *L. potentillæ*, *Apiospora rosenvingei*, *Ocleroa oxyria*, *Leptosphaeria brachysca*, *Melanomma sali*

**1251. ROSTRUP, E.—Continued.**

*cinum*, *Acanthostigma alni*, *Pleospora vitrea*; *Sphaeropsidæ* 23 sp., new, *Phyllosticta ledi*, *Phoma hieracii*, *Septoria pyrolata*, *Dinemasporium galbulicola*; *Gymnomycetes* (*Melanconiceæ*) 13 sp., new, *Melanostroma sorbi*; *Hyphomycetes* 17 sp., new, *Cercospora oxyriae*, *Heterosporium stenhammaræ*, *Dendrodochium betulinum*; *Zygomycetes* 1 sp.; *Entomophthoraceæ* 1 sp.; *Saprolegniaceæ* 1 sp.; *Peronosporaceæ* 1 sp.; *Chytridiaceæ* 1 sp., new, *Physotherma hippuridis*. Of sterile mycelia 8 species were found, of which *Sclerotium baccharum* is new. (T. H.)

**1252. TRAIL, J. W. H. Report for 1890 on fungi of east of Scotland.** <Scottish Naturalist, No. 31, Perth, Jan., 1891, pp. 31–35.

Lists of fungi from the Provinces of Forth, Tay, and Dee, comprising *Uredineæ*, *Ustilaginæ*, *Pyrenomycetes*, *Ascomycetes*, *Perisporiaceæ*, *Peronosporæ*, *Hyphomycetes*, *Discomycetes*, and *Gastromycetes*, with host plants, dates, and brief notes on some of the species. (M. B. W.)

**1253. WHYMPER, EDW. Travels amongst the great Andes of the Equator, with maps and illustrations.** 8vo. New York, 1892, pp. xxiv, 456.

On page 199 notes the occurrence on Antisana, at an elevation of 13,000 feet, of *Omphalia umbellifera* Fr. and *Psilocybe* sp. On pages 209 and 352 mentions finding of *Cantharellus whymperti* Massee & Murray on Pichincha at an elevation of 15,300 feet. (J. F. J.)

## III.—OOMYCETES.

**1254. WILLIAMS, THOS. A. Notes on Peronosporaceæ.** <Bull. Torrey Bot. Club, vol. xix, New York, Mar. 5, 1892, pp. 81–84.

Gives notes on species of *Peronospora*, *Sclerospora*, *Plasmopara*, and *Cystopus*, found in the vicinity of Brookings, S. Dak. A table is also given showing the rainfall during the summer months of 1890 and 1891. (J. F. J.)

## V.—BASIDIOMYCETES.

**1255. [ANON.] [Edible Agaricini.]** <Bot. Gaz., vol. xvi, Crawfordsville, Ind., May 16, 1891, p. 157.

Notes that of the 1,400 species of Agaricini in Great Britain 134 are edible, 30 are poisonous, and of 516 nothing is known. The balance are too small, too tough, or too rare to be of value. (J. F. J.)

**1256. [ANON.] Notes on Tremellini.** <Grev., vol. xx, No. 93, London, Sept., 1891, p. 15.

List of species of *Dacryomyces* and *Peziza*, not in Saccardo's Sylloge, and descriptions as new of *Auricularia corium* Berk. in Herb., and *A. epitrichia* Berk. in Herb. *Tremella lilacina* Mull. is mentioned as being the same as *T. sarcoides*. (M. B. W.)

**1257. [ANON.] Revue horticole.** <Nouv. Ann. Soc. Hort. Gironde, No. 55, Bordeaux, Sept., 1891, pp. 152–153.

Contains a note on the importance of mushroom culture in the environs of Paris, with brief account of manner of growing. (M. B. W.)

**1258. [ANON.] Trametes trogii Berk.** <Grev., vol. xxi, London, Dec., 1892, pp. 45–46.

Refers to paper in Jour. de Bot. by M. P. Hariot in which it is concluded that *Trametes hispida* and *T. trogii* are identical. States that this conclusion is erroneous, inasmuch as Hariot had not seen the type specimen of *T. trogii*. Gives a description of the specimen, and says it is quite distinct from *T. hispida*. (J. F. J.)

**1259. BOURQUELOT, EM. Le "toboshi," champignon du Japon analogue à l'Agaric blanc des pharmacies.** <Bull. Soc. Mycol. France, vol. viii, Paris, Mar. 31, 1892, p. 39.

The inhabitants of Yezo designate under the name "toboshi" a mushroom that grows on trunks of larch (*Larix leptolepis*). This is a species of *Polyporus*, about the size of one's fist. They prepare of it a remedy against the sweating of phthisic patients. It contains a resin and an acid, the last of which is not, however, identical with agaric acid. (T. H.)

**1260. BOUDIER and PATOUILLARD. Note sur une nouvelle Clavaire de France.** <Bull. Soc. Mycol. France, vol. viii, May 22, 1892, pp. 41–43, p. 1.

Describes *Clavaria geoglossoides* Boud. et Pat. as a new species. It was found growing together with *C. inaequalis* and *C. similis*. According to the description and the figures, it shows a striking resemblance to a *Geoglossum*, but has the principal characters in common with the genus *Clavaria*. (T. H.)

- 1261.** BRITZELMAYR, M. **Das Genus Cortinarius.** <Bot. Centralbl., vol. II, Cassel, June 28, July 12, 1892, pp. 1-9, 33-42.

Among the characters which seem to be constant for this genus is the manner in which the lamellæ are attached to the pileus, as well as the color, the shape, and the size of the spores. The author enumerates the species arranged according to the system of Fries, and adds to each the size of the spores, besides giving descriptions of several of his own species. The following new species are described: *Cortinarius largiusculus*, *C. disputabilis*, *C. perognitus*, *C. extricabilis*, *C. vesperus*, *C. politulus*, *C. optimatus*, *C. albidocyaneus*, *C. fusco-violaceus*, *C. collocandus*, *C. effetus*, *C. submyrtilinus*, *C. melleifolius*, *C. subinfucatus*, *C. abiegnus*, *C. inurbanus*, *C. fulvo-cinnamomeus*, *C. faginei*, *C. subcarnosus*, *C. assumptus*, *C. quæstus*, *C. divulgatus*, *C. illepidus*, *C. luxuriatus*, *C. benevalens*, *C. multivagus*, *C. fetularis*, *C. blandulus*. Gives also several critical notes on the species named by Fries, which are enumerated in the list. (T. H.)

- 1262.** COOKE, M. C. **British Tremellineæ.** <Grev., vol. xx, No. 93, London, Sept., 1891, pp. 16-22.

A revision of the British species of this family, with characterization of the family, subfamilies, genera, and species. (M. B. W.)

- 1263.** COOKE, M. C. **New British fungi.** <Grev., vol. xx, No. 93, London, Sept., 1891, p. 25.

Descriptions of *Agaricus* (*Flammula*) *aldrigii* Massee and *Paxillus subinvolutus* Batsch. (M. B. W.)

- 1264.** COOKE, M. C. **Notes on Clavariæ.** <Grev., vol. xx, No. 93, London, Sept., 1891, pp. 10-11.

Critical notes on several species of *Clavaria*, *Calocera*, and *Lachnocladium*, with description of *Clavaria muelleri*, *C. tasmania*, *Lachnocladium kurzii* Berk. in Herb. *L. rubiginosum* Berk. & Curt. in Herb., *L. hookeri* Berk., and *Acurtis giganteum* are said not to be good species. (M. B. W.)

- 1265.** COOKE, M. C. **Notes on Thelephoriæ.** <Grev., vol. xx, No. 93, London, Sept., 1891, pp. 11-13.

A list of species, with notes and locations, of *Hymenochaete*, *Peniophora*, *Corticium*, and *Conophora*. *Hymenochaete scrufosa* Mass. in Herb., *Corticium compactum* B. & C. in Herb., and *C. nigrescens* B. & C. in Herb. are described as new. (M. B. W.)

- 1266.** COOKE, M. C. **Species of Cyphella.** <Grev., vol. xx, No. 93, London, Sept., 1891, p. 9.

A list of twelve species not included by Saccardo in his Sylloge, with descriptions of four new species: *C. fumosa* on *Gladiolus*, *C. fuscospora* Currey in Herb., *C. australiensis*, and *C. texensis* Berk. & Curt. in Herb. (M. B. W.)

- 1267.** DELOGNE, C. H. **Les Boteles, analyse des espèces de Belgique et des pays voisins, avec indication des propriétés comestibles ou vénéneuses.** <Bull. Soc. Belg. de Micr., t. XVII, Brussels, Feb., 1891, pp. 70-87.

Gives the characters of the genera *Boletinus*, *Boletus*, *Girodon*, *Strobilomyces*, and *Phylloporus*, with descriptions of the species. The article has special reference to distinguishing the poisonous and edible species. (M. B. W.)

- 1268.** MORGAN, A. P. **Myriostoma coliforme, Dicks, in Florida.** <Am. Naturalist, vol. XXVI, Philadelphia, Apr., 1892, pp. 341-342.

Notes the occurrence of this species as found by L. M. Underwood near Eldorado, Fla. Describes the internal structure, concluding that probably *Geaster columnatus* is the same species. (J. F. J.)

- 1269.** MORGAN, A. P. **North American fungi, fifth paper. The Gastromycetes.** <Jour. Cin. Soc. Nat. Hist., vol. XIV, Cincinnati, Oct., 1891 to Jan., 1892 [Mar. 5, 1892], pp. 141-148, pl. 1.

Describes new genera and species, as follows: *Bovistella* n. gen., *Catastoma* n. gen., *C. pedicellatum*, *Bovista montana*, *B. minor*, and gives besides descriptions of old species belonging to various genera. (J. F. J.)

- 1270.** TOWNSHEND, N. S. **Mushrooms for the table.** <Jour. Columbus Hort. Soc., vol. VII, Columbus, Ohio, Mar., 1892, pp. 6-8.

Describes briefly the appearance of various species of edible mushrooms (*Agaricus*, *Morchella*, truffle, and puff ball), giving directions for cooking, and a short statement of how to distinguish edible from poisonous species. (J. F. J.)

- 1271.** TURNER, W. S. **Mushroom culture.** <Jour. Columbus Hort. Soc., vol. VII, Columbus, Ohio, Mar., 1892, pp. 8-10.

Gives directions for preparing beds for mushroom cultivation, with an estimate of the probable money value of the product. (J. F. J.)

## VI.—UREDINEÆ.

1272. DETMERS, FRED. A preliminary list of the rusts of Ohio. <Ohio Agr. Exp. Sta. Bull. No. 44, Columbus, Sept., 1892, pp. 133-140.

Gives a list of species of *Uromyces*, *Puccinia*, *Phragmidium*, *Gymnosporangium*, *Melampsora*, *Coleosporium*, *Cœoma*, and *Æcidium*, together with notes on hosts and localities. (J. F. J.)

1273. DIETEL, P. Zur Beurtheilung der Gattung *Diorchidium*. <Ber. d. Deutsch. Bot. Ges., vol. x, Heft 2, Berlin, Mar. 23, 1892, pp. 57-63, figs. 2.

A revision of the genus *Diorchidium* and a discussion of several of the species formerly described by Magnus. The author's opinion is that while the genus *Diorchidium* is probably not tenable, because there are transition forms into *Puccinia*, he would nevertheless retain it for the present, because the distinction between other genera (*Uromyces* and *Puccinia*) are quite as artificial. For the present, therefore, he would include in *Diorchidium* species in which the majority of the spores have the septum perpendicular upon the pedicel. The genus *Sphenospora* is, however, established by the author for *Diorchidium pallidum*, much on account of the differences in the development of the spores. It is characterized by having no endospore and consequently no germpores are formed before germination. Only when germination has taken place are the places indicated through which the contents of the spore has come out. (T. H.)

1274. KLEBAHN, H. Bemerkungen über *Gymnosporangium confusum* Plowr. und *G. sabinae* (Dicks.). <Zeitsch. f. Pflanzenkrank., vol. II, Heft 2, Stuttgart, 1892, pp. 94-95.

The author states the discovery of *Gymnosporangium confusum* in the vicinity of Bremen. It has been shown by culture that this fungus developed abundant æcidia upon *Crataegus oxyacantha*. According to Dr. Focke, this fungus has existed near Bremen since 1860. There had been planted a number of varieties of *Crataegus* that were badly injured by a *Rustelia*, while numerous pear trees in the same garden did not show any sign of fungous disease. (T. H.)

1275. KLEBAHN, H. Zur Kenntniss der Schmarotzer-Pilze Bremens und Nordwestdeutschlands, Zweiter Beitrag. <Abhand. des Natur. Ver. Bremen, vol. XII, Bremen, May, 1892, pp. 361-376.

Ninty-six species of fungi are known from the vicinity of Bremen, among which *Puccinia* is represented by 43, *Uromyces* 11, *Melampsora* 9, and some others scarcely at all. The paper contains remarks upon some of the important forms, such as *Lagenidium*, *Synechium* n. sp. *ad interim* of the family *Ancylistaceæ*. This fungus is merely known in the sporangium form and occurs in *Edogonium bosci*. A new variety of *Puccinia perplexans* is described, namely, *arrhenatheri*, found upon *Arrhenatherum elatius* and a variety, *corticicola*, of *Phragmidium rubi*. *Peridermium pini* is rare in the northwestern parts of Germany, and the author mentions that the teleutospore form is still unknown. The spermogonia of *Peridermium* showed some differences when the fungus has been taken from *Pinus strobus* or *P. sylvestris*. Those of the last do not cause any swelling of the branches and they are only visible when the bark has been removed. They then show as yellow spots, but the microscopic structure is almost the same as in *P. strobi*. The peculiar odor observed in the spermogonia of *P. strobi* was not found in *P. pini*. (T. H.)

1276. THAXTER, R. The Connecticut species of *Gymnosporangium* (cedar apples). <Ann. Rept. Conn. Agr. Exp. Sta. for 1891, New Haven, 1892, pp. 161-165.

Discusses the connection between cedar apples and rust of fruit trees. Mentions species found in Connecticut and describes development. Notes experiments to determine the life history of the "bird's-nest" form and describes as a new species *Gymnosporangium nidus-avis* (see No. 310). (J. F. J.)

(See also No. 1227.)

## VIII.—ASCOMYCETES.

## a.—Gymnoasci.

1277. BOUDIER, EM. Description de deux nouvelles espèces de *Gymnoascus* de France. <Bull. Soc. Mycol. France, vol. VIII, May 22, 1892, pp. 43-45, pl. 1.

*Gymnoascus umbrinus* and *G. bourqueloti* are described and figured as new. (T. H.)

## b.—Perisporiaceæ.

1278. BOMMER, CH. Un champignon pyrénomycète se développant sur le test des Balanes. <Bull. Soc. Belg. de Micr., t. XVII, Brussels, May 30, 1891, pp. 151-154.

Describes *Pharacidia marina*, which is found growing on living *Balanus balanoides*. The most remarkable thing about the species is the symbiotic relation between its mycelium and unicellular algæ (Chroococcaceæ) which the author has described. (M. B. W.)

- 1279.** CHATIN, A. *Nouvelle contribution à l'histoire de la truffe (Tirmania cambonii). Terfas du Sud algérien.* <Comp. Rend., vol. CXIV, Paris, June 13, 1892, pp. 1397-1399.

*Tirmania cambonii* is a new species from Algeria, closely related to *T. africana*, but differing from it by its finely veined flesh and the larger asci and spores. The spores also contain an oily matter in large quantity. The following truffles have so far been observed in Algeria: *Terfezia leonis*, *T. boudieri*, *T. claveryi*, *Tirmania africana*, and *T. cambonii*. (T. H.)

c.—*Sphæriaceæ*.

- 280.** ATKINSON, GEO. F. *On the structure and dimorphism of Hypocrea tuberiformis.* <Proc. Am. Asso. Adv. Sci. for 1891, vol. XI, Salem, Mass., July, 1892, p. 320.

Abstract giving a statement of various papers published on the subject. Notes that both perfect and conidial stages have been found by the author in Alabama. These are described. The opinion is expressed that the species should be placed, pending further study, in the genus *Hypocrella*, and be known as *Hypocrella tuberiformis* (B. & Rav.) (see No. 611). (J. F. J.)

- 1281.** BAUMANN, E. *Ueber Cordyceps robertsii Berk.* <Ber. d. Schweizer. Bot. Ges., vol. II, Basel und Genf, 1892, p. 70.

This fungus was parasitic upon the pupa of *Hepialus virescens* from New Zealand. (T. H.)

d.—*Discomycetes*.

- 1282.** [ANON.] *Morels.* <Gard. Chron., 3d ser., vol. IX, London, Apr. 18, 1891, pp. 504-506, fig. 1.

Figure of the fungus. (M. B. W.)

- 1283.** BOUDIER, EM. *Note sur les Morchella bohémica Kromb. et voisins.* <Bull. Soc. Mycol. France. vol. VIII, Paris, July 21, 1892, pp. 141-144.

*Morchella bohémica* was first described and figured by Krombholz in 1828; it was referred to the genus *Morchella*. Other authors placed the species under the genus *Verpa*, but Boudier prefers to arrange it as a subgenus of *Verpa*, viz. *Ptychoverpa*. There are some differences from the true *Verpæ*, which consist in the morcheloid aspect of the fungus, the few-spored thecae, and the size and shape of the spores. *Morchella bispora* and *M. gigaspora* are probably not distinct species, but rather represent forms of the above. (T. H.)

- 1284.** PHILLIPS, WM. *New Discomycetes from Orkney.* <Scottish Naturalist, No. 32, Apr., 1891, Perth, pp. 89-91.

Describes the following new species: *Hymenosephypha symphoricarpi*, *H. (Niptera) cinerella* Sacc., forma *cæspitosa*, *Lachnella orbicularis*, *L. brunneociliata*, *L. (Helotiella) laburni*, and *Cenangium empetri*, with descriptions of two other species. (J. F. J.)

IX.—IMPERFECT AND UNCLASSIFIED FORMS.

a.—*Hyphomycetes and Stilbeæ*.

- 1285.** MORGAN, A. P. *Two new genera of Hyphomycetes.* <Bot. Gaz., vol. XVII, Bloomington, Ind., June 15, 1892, pp. 190-192, figs. 2.

Describes *Cylindrocladium* n. gen. and *C. scorparium* n. sp. on pod of *Gleditschia triacanthos*, and *Synthetospora* n. gen. and *S. electa* n. sp. on *Peziza* sp. (J. F. J.)

b.—*Sphærospideæ and Melanconieæ*.

- 1286.** [ANON.] [*Greeneria fuliginea*.] <Bot. Gaz., vol. XVI, Crawfordsville, Ind., Feb. 15, 1891, p. 60.

Notes change of position in classification of the species. According to Cavaia it belongs with the *Melanconieæ* instead of *Sphærospideæ*, and should be called *Melanconium fuligineum* (Scrib. & Viala) Cavaia. Specific characters are given. (J. F. J.)

G.—MORPHOLOGY AND CLASSIFICATION OF BACTERIA.

- 1287.** BALL, V. M. *Essentials of bacteriology; being a concise and systematic introduction to the study of microorganisms for the use of students and practitioners.* Philadelphia, 1891, pp. 159, figs. 77.

Discusses the classification of bacteria and gives an outline of the various schemes of classification. Notes the various forms assumed and the effect produced by bacteria on living organisms. Gives methods of examinations and of staining, and formulæ for various reagents; methods of culture; descriptions of various media employed; modes of inoculation, growth, and appearance of colonies; special modes of cultivation; and effects of bacteria on animals. In part two, discusses special bacteriology, describing diseases due to the organisms, and in appendix gives an account of yeasts and moulds, with methods of examination. (J. F. J.)

- 1288.** WARD, H. MARSHALL. On the characters or marks employed for classifying the *Schizomycetes*. <Ann. of Bot., vol. vi, London, Apr., 1892, pp. 103-144.

Gives a brief outline of the history of the classification of bacteria, presenting in tabular form the various schemes proposed, as follows: Cohn in 1875; Winter in 1881; Van Tieghem in 1884; Flüge in 1886; Hnepe in 1886 and later; Zopf in 1885; De Toni in 1889; Miquel in 1891; and Woodhead in 1891. Each of these is briefly discussed. Suggests in conclusion that in the future notes be made on habitat, nutrient medium, gaseous environment, temperature, morphology and life history, special behavior, and pathogenic effects. (J. F. J.)

(See also Nos. 1228, 1236.)

#### J.—TECHNIQUE.

- 1289.** ARTHUR, J. C. Cultivating the *ascosporous* form of yeast. <Bot. Gaz., vol. xvii, Bloomington, Ind., Mar. 17, 1892, pp. 92-93.

Describes a method used to successfully cultivate yeast spores according to a plan recommended by Hansen. (J. F. J.)

- 1290.** ATKINSON, GEO. F. An automatic device for rolling culture tubes of nutrient agar-agar. <Bot. Gaz., vol. xvii, Bloomington, Ind., May, 1892, pp. 154-156, pl. 1, fig. 1.

Describes method of making an apparatus for keeping culture tubes in motion. (J. F. J.)

- 1291.** CHESTER, F. D. A new culture cell. <Micros. Bull., vol. ix, Philadelphia, Aug., 1892, pp. 25-26, fig. 1.

Describes a cell designed by N. A. Cobb for the study of the growth of microscopic fungi. (J. F. J.)

- 1292.** RUSSELL, H. L. The effect of mechanical movements upon the growth of certain lower organisms. <Bot. Gaz., vol. xvii, Bloomington, Ind., Jan. 20, 1892, pp. 8-15.

Describes apparatus for experiment and gives details of the results. The species experimented with were *Monilia candida*, *Oidium albicans*, and *Saccharomyces myoderma*. The results showed more rapid growth in the agitated than in the stationary flask, but a greater amount of alcohol was found in the latter than the former. The increase in growth in the agitated flask is apparently due to more perfect aeration and better nutrition. (J. F. J.)